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RAIL TRACK SAFETY MONITORING TECHNOLOGY

HEARING

BEFORE THE

SUBCOMMITTEE ON TRANSPORTATION,
AVIATION AND MATERIALS

OF THE

COMMITTEE ON
SCIENCE AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

NINETY-EIGHTH CONGRESS

SECOND SESSION

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RAIL TRACK SAFETY MONITORING TECHNOLOGY

FRIDAY, JULY 27, 1984

House of Representatives,
Committee on Science and Technology,
Subcommittee on Transportation, Aviation and Materials,
Washington, DC.

The subcommittee met, pursuant to call, at 9:35 a.m., in room 2325, Rayburn House Office Building, Hon. Dan Glickman (chairman of the subcommittee) presiding.

Mr. **Glickman**. Good morning. Why don't we get started.

Before I begin with an opening statement, I think Mr. Riley, do you have a slight conflict?

Mr. **Riley**. Yes, I do, Mr. Chairman.

Mr. **Glickman**. OK; what I would ask, then, is that after Ms. Goldman testifies, perhaps we would put you on second then, if that would help you.

Mr. **Riley**. I would appreciate that procedure.

Mr. **Glickman**. So we will do that. That will accelerate your departure.

Today this subcommittee will focus its attention on rail safety with an emphasis on railroad track and roadbeds and the use of modern technology to enhance the safety of the Nation's railroad system.

Since Amtrak started operations in 1971, only 24 passengers have been killed in accidents, but many of those fatalities have occurred in the last 8 months; 148 passengers were injured in the Vermont accident alone earlier this month. These accidents come at a time when we in Congress are being assured that the rail system is being modernized and significantly improved. Yet, most of these recent accidents could have been prevented by the use of relatively simple, modern technology.

For example, the use of modern electronic communication links to the National Weather Service could have prevented the Amtrak accident in Vermont earlier this month, the accident near Connellsville, PA, on May 29, and the accident near Emerson, IA, on June 15, 1982. All of those accidents involved derailments due to weather conditions, and in every case emergency weather alerts had been issued, but the information never reached the engine crews.

No. 2, the use of a modern signal system, which had been scheduled for installation, could have prevented the recent Amtrak accident in Queens, NY.

No. 3, the use of modern grade crossings could prevent a substantial number of grade crossing accidents such as the one that occurred at McBee, SC, which I understand occurred as the main grade crossing was being reworked.

Over the last several years, I have been particularly concerned about the large number of derailments that occur each year and the apparent lack of concern at the Federal Railroad Administration about these derailments. My concern was heightened in 1981 when a report by the inspector general of the Department of Transportation indicated that the FRA's rail safety program was vulnerable to fraud and impropriety. That report cited numerous examples of potential conflicts of interest, deficiencies in the documentation and processing of claims against rail carriers, and the need for closer supervision of track inspectors.

In 1982, the General Accounting Office released a report on the FRA's rail safety program, initiated at the request of Representatives Florio, Matsui, and myself. The GAO concluded that the FRA's primary means of monitoring industry compliance with Federal safety standards is time-consuming and ineffective.

I am pleased that there have been some changes at the Federal Railroad Administration and that railroads now have sufficient revenues in most cases to make improvements in track and roadbed maintenance. We have seen some of the results in a dramatic decrease in the number of derailments which are down from 8,763 in 1978 to around 3,000 in 1983. However, the fact remains that we have still a long way to go.

One thing that has not changed in the last few years is the fact that the Federal Government, and particularly Amtrak, relies almost totally on private railroads who own the track to assure the safety of the railways. That situation is in dramatic contrast to the way the Federal Government deals with aviation safety.

I strongly feel that Amtrak must take much more direct responsibility for assuring the safety of the track, roadbed, and grade crossings on the railways on which it operates. Although they continue to rely on the railroads to maintain the track, I understand that Amtrak has agreements with these same railroads to protect them from accident liability risks. The potential impact of those agreements on rail safety is also of some concern to me.

Last November, following the derailment of the Amtrak Eagle near Marshall, TX, that killed four people, I wrote to Amtrak officials calling for a systemwide track and roadbed inspection program. I was told that it would cost too much and that the present system was adequate. These recent accidents have heightened by concern; yet Amtrak and FRA officials remain committed to the status quo.

I am particularly interested today in considering using the technology that is currently available to improve the safety of the Amtrak system. In addition to the simple modernization of the system that I mentioned earlier, perhaps we need to make more extensive use of track geometry measurement vehicles, track hazard detectors, and other systems to automate track inspections. That is an issue we will also consider today.

Now I would ask my ranking member, Mr. Carney, for any comments he may have.

Mr. **Carney**. Thank you, Mr. Chairman.

This subcommittee has held numerous hearings these past few years which focused on aviation safety. It is appropriate that we now look at the mode of transportation which has received much less attention. In our fast pace today we often forget that millions of Americans still choose to travel by train, and although many factors guide their choice, surely safety is one very important consideration. Certainly for the passenger, rail transportation has been and continues to be one of the safest modes of transportation available, offering the same high level of safety as offered by scheduled airlines.

The eight Amtrak fatalities since last November increased by half the total number of fatalities in the 13-year history of Amtrak, and yet this was roughly the equivalent of only 1 hour of fatilities on our national highways.

Unfortunately, these rosey statistics do not tell the whole story. Passenger fatalities account for less than one-half of 1 percent of the total railroad fatalities. Four out of 1,073 fatalities in 1983 were passenger fatalities. Although railroad accidents have been steadily declining over the last several years, there is some evidence that the technology that is available today is not being effectively used to bring these accident figures down even lower. Several of the recent accidents, as noted by the chairman, are examples of this failure to use existing technologies to improve rail safety.

Is this recent rash of accidents a fluke or is this an indication that the system is breaking down? This is the question that we need to address today. The witnesses who will be testifying here this morning, Mr. Chairman, bring a wide differing perspective to this hearing and I look forward to a most interesting and informative hearing. And I would like to congratulate you for calling this hearing in a timely manner, and I might note for the record that the chairman called this hearing before several of the most recent accidents, indicating that it didn't take national headlines for the chairman to move forward to look at our rail systems.

Thank you, Mr. Chairman.

Mr. **Glickman**. Mr. McCandless, would you have any comments this morning?

Mr. **McCandless**. Thank you, Mr. Chairman. I have no comments at this time.

Mr. **Glickman**. Thank you. OK. We are pleased to have as our first witness Patricia Goldman, Vice Chair of the National Transportation Safety Board. Your Board has been busy, and it has also been busy before our committee. Your Chairman testified before us earlier this week. I think the Safety Board does an extraordinary job. I just want you to know that and I appreciate you being here this morning.

STATEMENT OF HON. PATRICIA A. GOLDMAN, VICE CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD, ACCOMPANIED BY HAROLD STOREY, CHIEF, RAILROAD ACCIDENT DIVISION

Ms. GOLDMAN. Thank you, Mr. Chairman.

Mr. GLICKMAN. By the way, to all the witnesses, your entire statements will appear in the record. If it is faster for you to read them, that's fine, or if it's faster to summarize, because we would like to have more time for questions.

Ms. GOLDMAN. Fine. Thank you, Mr. Chairman. I appreciate your inviting us here today and I am particularly appreciative of your fine comments about the Board. Much of it goes to the staff. As you can imagine, with four full-time rail investigators in our office, we have been more than a little busy over the last few months.

I would like to enter my remarks in the record and speak about—since you raised it, some of the recent accidents. When we prepared the testimony—to talk about the track issues, and much of that is contained in the testimony. I would like to make a few points because I have been concerned about the tenor of the comments that have been going on about some of the recent accidents.

There has been a great deal of discussion obviously in the media about what has come to be called a "rash" of accidents, and obviously it is appropriate for Congress, and other bodies and the media, to be looking at the various issues. But I'm afraid that there has been a concentration on some single issues which may obscure the safety lessons.

It is very easy to assign—for example, in this most recent New York accident, ascribe the accident to a single human error on the part of one human being. That's too simple. I think it doesn't serve public safety on the railroads to figuratively take the signalman out and shoot him. I think that lets the system off the hook. This is a Federal system and the public deserves a careful, independent, and all-encompassing analysis which may involve some systemic problems. And if there are systemic problems, then I think we are much more likely to find a solution and improve railroad safety than assuming that it's one human being that broke down in this case.

For example, there has been much made about the issue of drugs in relation to this accident. I think that may be——

Mr. GLICKMAN. You're talking about the Queens accident?

Ms. GOLDMAN. I'm talking about the Queens accident. I think that may be potentially a red herring that may obscure other issues. So while certainly the Safety Board has been very vocal on the issue of drugs and alcohol—and we intend to continue—we are, because we want to see what part that plays. I think there are other issues which we will be looking at, like training and communications and technology and supervision that must be looked at and not be obscured by some of the issues that have been raised.

Because so much has been made about the drug situation, we are at the Safety Board still looking at a whole series of things. All the information that is coming out is premature. We've conducted interviews with various people; sometimes those interviews conflict. Our job is to sort all those out.

For example, the laboratory analysis of the urine of the signalman did show, in a preliminary analysis, that there was a metabolite of cocaine in the urine at the lower detection limit. It was at such a low limit that, in fact, it could have been a fluke. So another test was done to try and confirm that. We will be doing continuing ones. A second one also showed positive again at the very lower limit. In fact, a subsequent blood analysis did not confirm the urinalysis test. But again, that is preliminary. We have to do other tests. It could be that all traces had disappeared from the blood. So I wanted to raise this only from the standpoint that we cannot reach simple early conclusions on the basis of some of those facts. The Safety Board is going to be looking at all aspects of the Queens accident as we do in every accident to make sure we have covered all of the ground.

For example, whether the signalman did or did not throw the correct signals, or block the correct signals, there is conflicting statements there even in the transcripts that were released somewhat in the paper yesterday. So, rather than go through a preliminary analysis of that, we think we should try and wait until all the material is in.

I would also like to raise, because the headlines are full this morning, of another case where a vehicle got on the tracks in front of an Amtrak train yesterday in South Carolina. I would really like to make the point in terms of these grade crossing accidents, to stress that these are really highway accidents that involve a train. Not to diminish them. There is much that can be done. You have talked about grade crossing safety as something the Safety Board has been very concerned about. We worked very closely with Operation Lifesaver. In fact, South Carolina has an Operation Lifesaver in practice. Much more can be done. I am certain grades can be upgraded in terms of the protection that is available, but I would want to stress that these are really highway accidents as far as we're concerned.

With that, I would be happy to go through either some of the other cases and the issues that we are looking at that you raised in the Vermont accident, which I was responsible of leading the team. There are issues that are raised there again in terms of the weather, which seems as if it was a very unusual circumstance, and indeed it was. You had some further unusual circumstances in terms of the beaver ponds that we now find up there. It is not something the Safety Board regularly runs into with its accident investigations. But we are looking there at the cases of weather problems and communications, as you stressed, as use of radios and other issues.

With that, if you would like, I can turn to some of the track issues and just set a little bit of the stage, and then perhaps you would like to go into questions.

To set the stage for my comments, let me begin by noting that the National Transportation Safety Board has from 1969 to the present issued 30 major railroad accident reports resulting in 94 safety recommendations in which a cause of the accident was the failure of the track to perform as it should under dynamic loads. In these accidents, certain track parameters such as roadbed, track geometry, rail, or joint bars failed to remain within the minimum standards set by the Federal Railroad Administration.

Beyond these accidents that generated full-scale reports by our Board, nearly 170 field investigations completed by the Board between 1976 and the first quarter of 1982 have implicated failed track as causal. Estimated railroad property damage exceeded $59 million in these accidents, and there were also eight fatalities and 170 injuries recorded.

These high numbers are not really a surprise. The accident statistics reported by the railroads themselves to the FRA from the years 1977 to 1983 reveal that track problems caused 22,299 accidents with railroads reporting estimated property damage of $679 million.

In regard to the statistics, there are some points that I should make. First, the damage costs are railroad estimates and there is every reason to believe they may be conservative. We expect that they normally reflect the depreciated cost of equipment, not its replacement value. Second, these numbers do not reflect the cost of injuries and other claims, and finally, any reporting system that is based on the unmonitored reporting leaves open the possibility of underreporting. In any event, at a minimum, the consequences of these accidents can be measured in terms of deaths, dollars and certainly injuries.

At this point let me put forward another reason why this issue is properly one of concern. Naturally, most track-related accidents result in derailments, and in 1982 alone, derailments involved the release of hazardous materials in 394 train consists.

This latter point—the release of hazardous materials—is one on which the Safety Board has commented on significantly before. I might cite one example that has been much discussed, and that is the accident in September 1982 in Livingston, LA, where the citizens of that town awoke to a 43-car derailment that led to fires, explosions, and chemical spills that drove people from their homes. Some people never were able to return, and the effort to clean up the chemicals took more than a year. The residents of Livingston called it a miracle that no one was killed as a result of the accident. Certainly, I don't think anyone can quarrel with that assessment.

The accident aftermath focused on the insobriety of the crew members and the determination by the Board that a railroad clerk was operating the locomotive. However, I think it is important, particularly in the context of this hearing you are having today, to make it clear that the Safety Board has also determined that the Livingston, LA, derailment itself was initiated by a broken track joint on a section of rail that reportedly had been inspected the day before the accident.

Of course, not all railroad accidents involve hazardous materials or other freight. As we have seen, some where the cargo was passengers in the case of some other accidents. Such was the case when a passenger train derailed at Goodman, MS, in June 1976. There the Safety Board found that although the track complied with FRA standards, the track structure was inadequate. The rate of change of track alignment was addressed by the Board after that accident.

I cite that accident, which may be 8 years old, as illustrative of the fact that the Safety Board can find what it believes are deficiencies in Federal rules, we make recommendations to remedy those, but we can occasionally—and many times more than we like—have those recommendations go unheeded. In fact, in the case of Goodman, MS, the FRA's initial response was that it would study the issue of modifying track geometry standards. Further correspondence between the Board and FRA ensued, but finally, in November of 1982, we determined that the recommendation was not going to be accepted and labled it, as we call it, "closed unacceptable."

I should also note that in early 1982 the Safety Board went on record in response to the FRA's then proposed rulemaking to reduce existing track safety standards. Our position was, and still is, that the accident history of railroad operations has shown repeatedly that the standards relating to track structure must include a safety margin—a cushion, if you will—sufficient to reflect the reality that no one can adequately predict the effect of varied operating conditions upon safety.

The FRA's proposed revisions did not provide what we viewed as a necessary margin of safety. Therefore, we recommended that the FRA not lower those standards, at least not until it had accomplished valid research and testing to support the contention that the lowering of standards would not adversely affect rail safety. Our view did not prevail.

As a result of the final rulemaking in November 1982, the Safety Board closed 17 of our recommendations directly related to FRA's track standards. Unfortunately, the FRA's position forced us to close them as unacceptable.

It is important for this subcommittee to keep in mind that these recommendations were issued in the first place as the result of detailed accident investigations. In fact, they were the result of the investigation of 10 derailment accidents, a special study by the Board on broken rails, and a safety effectiveness evaluation of track standards as related to standards involving hazardous materials shipments.

These recommendations covered various aspects of track safety standards, including track geometry, track gage, quality control of track components, rail wear limits, effective inspection operations—procedures—operations on various track classifications, and the application of track standards to yard track. I will submit those series of recommendations for the record.

More recently, near Marshall, TX, an Amtrak train out of Chicago derailed a locomotive unit and nine cars while traveling at more than 70 miles an hour. Four passengers died and 24 others were hospitalized in that November 1983 accident.

Track maintenance workers had been repairing the track at the site of the derailment and it is apparent that the rail broke under the train. The Board has yet to issue its report concluding whether the track maintenance welding operations or rail quality—or a combination of both—were causal. Nevertheless, the Board has already issued recommendations relating to rail maintenance practices arising from that accident. An analysis of those responses is incomplete. But I am pleased to say that we have had correspondence from many of the railroads who have taken into account the recommendations, are either changing practices if they use this type of rail. But it shows that even before we get the report out we can begin to take correction action, and we have had some very positive response on that accident.

There is another accident still under investigation that the Safety Board will address track issues, and that is one that occurred last month, on June 8, in Philadelphia. It is premature to say what has happened. Attention has focused on what has been called a "heat kink," which is a distortion in the track ascribed to expansion caused by an extended period of high ambient temperature. The question is what can be done, and let me suggest an answer.

Out-of-tolerance track geometry is involved in 40 to 50 percent of all track-caused accidents in the United States. The FRA and U.S. railroads have developed highly sophisticated automated track geometry measuring cars. The Safety Board has underway a safety study of these cars and the programs in which they are used to detect hazardous track geometry problems before they cause or contribute to accidents. I believe this subcommittee should consider urging the FRA to do all it can to foster criteria for effective use of this recently developed technology so as to minimize the risk that track does not even measure up to the reduced FRA standards now in effect.

I would like now to turn quickly to the Williston, VT, accident which I had mentioned before. I think the details of how that accident came about are known. It has already become clear as you pointed out from the investigation that heavy localized rains and severe storm warnings had been issued the night before by the Weather Service for the county in which the accident occurred. Despite this, there had not been special track inspection in the eight hours since the southbound train had traversed the same track.

As you know, the Safety Board seeks to determine the cause of accidents so that it may make effective recommendations to prevent such recurrences. Without prejudicing the Vermont accident, I would point out that we have addressed the question of weather notification systems before, as we did after the Burlington Northern accident in Emerson, IA. In that case that railroad has taken action to go along with our recommendation. Our recommendation to Amtrak is still, although they have responded, it is not in a state that we feel is adequate. The Safety Board was informed that Amtrak has a weather collection office at its Washington headquarters that monitors National Weather Service data. This weather collection office is reportedly staffed by trained meteorologists 24 hours a day. Upon analysis of the potential for significant hazardous weather, reports are supposed to be sent to the operating railroads warning them of the possibility for flash floods, blizzards, or other occurrences that might put train operations in jeopardy.

Since the Amtrak collection office monitors the entire country, according to their correspondence with us, it seems that very localized storms such as the one that apparently occurred in Vermont might miss their attention. We will continue to pursue this issue with Amtrak as we continue to pursue all of the issues that we work on, whether we get an immediate acceptance of our suggestions, and I would look forward to answering any questions that you have.

[The prepared statement of Ms. Goldman follows:]

TESTIMONY OF
HONORABLE PATRICIA A. GOLDMAN
VICE CHAIRMAN, NATIONAL TRANSPORTATION SAFETY BOARD

Mr. Chairman, Members of the Subcommittee, thank you for the opportunity to testify today. The National Transportation Safety Board is pleased to have this opportunity to express it's continuing interest in ways to enhance the safety of rail transportation. With me today is Harold Storey, chief of our Railroad Accident Division.

The fact of these hearings demonstrates the Subcommittee's concern that perhaps not all that should be done to minimize track-related railroad accidents is actually being done. We believe there is good reason -- in fact, we believe there may be several reasons -- for that concern.

To set the stage for my comments, let me begin by noting that the National Transportation Safety Board has from 1969 to the present issued 30 major railroad accident reports resulting in 94 safety recommendations in which a cause of the accident was the failure of the track to perform as it should under dynamic loads. In these accidents certain track parameters such as roadbed, track geometry, rail, or joint bars failed to remain within the minimum standards set by the Federal Railroad Administration.

Beyond these accidents that generated full-scale reports by the Safety Board, nearly 170 field investigations completed by the Board between 1976 and the first quarter of 1982 have implicated failed track as causal. Estimated railroad property damage exceeded $59 million in these accidents. There were eight fatalities and 170 injuries recorded.

These high numbers from Safety Board files should be no surprise. Accident statistics as reported by the railroads themselves to the FRA for the years 1977 to 1983 reveal that track problems caused 22,299 accidents with railroads reporting estimated property damage of $679 million.

In regard to statistics, there are some points I should make. First, the damage costs are railroad estimates and there is every reason to believe they are conservative. We expect that they normally reflect the depreciated cost of equipment, not its replacement value. Secondly, these numbers do not reflect the costs of injuries and other claims. And finally, any reporting system that is based on virtually unmonitored self-reporting leaves open the possibility of underreporting of accidents.

In any event, at a minimum, the consequences of these accidents can be measured in multiple deaths and injuries and property damage ranging well into millions of dollars.

At this point, let me put forward another reason why this issue is properly one of great concern. Naturally, most track-related accidents result in derailments and in 1982 alone, derailments involved the release of hazardous materials in 394 train consists.

This latter point -- the release of hazardous materials -- is one on which I could easily dwell. There is much that can be said about the potential for dire consequences -- and even though there have been several accidents that suggest the potential is very real -- I will limit myself to citing but one example.

In the early morning hours of September 1982 the small town of Livingston, Louisiana awoke to a 43-car derailment that led to fires, explosions, and chemical spills that drove people from their homes. Some chose never to return and the effort to clean up the noxious chemicals took more than a year. Residents of Livingston have called it "a miracle" that no one was killed as a result of the accident. I, for one, would not quarrel with that assessment.

The accident aftermath focused on the insobriety of the crewmembers and the determination by the Board that a railroad clerk was operating the locomotive. However, I think it is important, particularly in the context of this hearing, to make it clear that the Safety Board has also determined that the

Livingston, Louisiana derailment itself was initiated by a broken track joint on a section of rail that had reportedly been inspected the day before the accident.

Of course, not all railroad accidents involve hazardous materials or other freight. Too often the cargo is human and the consequences are dire.

Such was the case when a passenger train derailed at Goodman, Mississippi in June 1976. There the Safety Board found that although the track complied with Federal Railroad Administration standards, the track structure was inadequate. The rate of change of track alignment was addressed by the Board after that accident.

I cite this accident from eight years ago as illustrative of the fact that the Safety Board can find what it believes are deficiencies in federal rules, make recommendations to remedy those deficiences, but have the recommendations go unheeded. In fact, in the case of the Goodman, Mississippi accident the FRA's initial response was that it would study the issue of modifying track geometry standards. Further correspondence between the Board and FRA ensued, but finally, in November 1982 the Board determined to close the recommendation, citing the FRA's response as unacceptable.

I should also note that in early 1982, the Safety Board went on record in response to the FRA's then proposed rulemaking to reduce existing track safety standards. Our position was -- and still is -- that the accident history of railroad operations has shown repeatedly that the standards relating to track structure must include a safety margin -- a cushion, if you will -- sufficient to reflect the reality that no one can adequately predict the effect of varied operating conditions upon safety.

The FRA's proposed revisions did not provide what we view as a necessary margin of safety. Therefore we recommended that the FRA not lower those standards -- at least not until it had accomplished valid research and testing to support the contention that the lowering of standards would not adversely affect rail safety.

Our view did not prevail.

As a result of the final rulemaking, in November 1982 the Safety Board closed 17 safety recommendations directly related to the FRA's track safety standards. Unfortunately, the FRA's position forced us to close them with our label, "Unacceptable Action."

It is important for this Subcommittee to keep in mind that these recommendations were issued in the first place as the result of detailed accident investigations. In fact, they were the result of the investigation of ten derailment accidents, a special study by the Board on broken rails, and a safety effectiveness evaluation of track standards as related to accidents involving hazardous materials shipments.

The recommendations covered various aspects of track safety standards, including:

-- track geometry
-- track gage
-- quality control of track components
-- rail wear limits
-- effective inspection procedures
-- operations on various track classifications; and
-- the application of track standards to yard track.

More recently, near Marshal, Texas, an Amtrak train out of Chicago derailed a locomotive unit and nine cars while traveling at more than 70 miles an hour. Four passengers died and two dozen others were hospitalized in that November 1983 accident.

Track maintenance workers had been repairing the track at the site of the derailment and it is apparent that the rail broke under the train. The Board has yet to issue its report concluding whether track maintenance welding operations or rail quality -- or a combination of both -- were causal. Nevertheless, the Board has already issued recommendations relating to rail maintenance practices arising from that accident. An analysis of the responses to those recommendations is not yet complete.

The full report will be forwarded to this Subcomittee as soon as it is available along with a copy of the recommendations and the Board's analysis of the responses received.

Another accident still under investigation by the Safety Board that will address track issues involves the one last month (June 8) at Philadelphia. As you know, it is premature to discuss that investigation other than to say early interest has focused on what is called "heat kink," a distortion in the track ascribed to expansion caused by an extended period of high ambient temperature.

If I may at this point, let me anticipate a question -- "What can be done about the substantial problem I have attempted to outline?" -- and let me suggest an answer that leaves aside, for the purposes of discussion, the rulemaking that weakened the standards in the first place.

Out of tolerance, track geometry is involved in 40 to 50 percent of all track-caused accidents in the United States. The FRA and U.S. railroads have developed highly sophisticated automated track geometry measuring cars. The Safety Board has underway a safety study of these cars and the programs in which they are used to detect hazardous track geometry problems before they cause or contribute to accidents. I believe this Subcommitte should consider urging the FRA to do all it can to foster criteria for effective use of this recently developed technology so as to minimize the risk that track does not even measure up to the reduced FRA standards now in effect.

I'd like now to turn to discussion of another area of track condition that became the focus of national attention with the recent Amtrak accident near Williston, Vermont in which five persons were killed and more than 100 were injured, 24 of them to the point of requiring hospitalization.

"The Montrealer" was northbound with 262 passengers when it reached a washed-out section of track shortly before 7 a.m. and derailed at 59 miles per hour. It has already become clear from our investigation that there were heavy localized rains and a severe storm warning had been issued the night before by the National Weather Service for the county in which the accident occurred. Despite this, though, there was no special track inspection in the eight hours since a southbound train had traversed the same track.

As this Subcommittee knows, the Safety Board seeks to determine probable cause of accidents so that it may make effective recommendations designed to prevent recurrences of that type of accident.

Without prejudging the cause of the Vermont accident, I would like to point to the fact that the Safety Board had previously addressed the need for an improved Amtrak-directed weather notification system.

The issue arose as a result of our investigation of an Amtrak train -- "The San Francisco Zephyr" accident at Emerson, Iowa, on June 15, 1982. The train was travelling about 74 miles per hour on the Burlington Northern Railroad's track when it encountered flood waters over the top of washed-out rails. The Board recommended on February 28, 1983 that Amtrak:

> Require that those railroads under contractual agreement to operate passenger trains adopt a system of professionally gathered and evaluated meteorological information to better assure timely knowledge of climatic conditions that may affect the safe operation of those passenger train movements.

On June 27, 1983, Amtrak replied to our recommendation as follows:

> "Amtrak corporate operations control will monitor the national weather summary so that this control can better coordinate safe train movements with the railroads charged with dispatching, operating or otherwise controlling the movement of Amtrak trains in accordance with their obligations for the safety of our passengers, employees and equipment under existing contracts."

The Safety Board was informed that Amtrak has a weather collection office at its Washington headquarters office that monitors the National Weather Service (NWS) data for the entire nation. This weather collection office is reportedly staffed by trained meteorologists 24 hours a day. Upon analysis of the potential for significant hazardous weather, reports are supposed to be sent to the operating railroads warning them of the possibility for flash floods, blizzards, high winds and other climatic conditions that might put train operations in jeopardy.

Since the Amtrak weather collection office monitors the entire country, it seems that very localized storms -- such as apparently occurred in Vermont -- might miss their attention.

Amtrak did not indicate how much confidence it has in predicting small areas of severe weather. As a result, the Safety Board has placed this recommendation in an "Open-Acceptable Action" classification.

However, based on the recent Vermont tragedy the Board continues to believe that more emphasis must be given to the adoption of a system of professionally gathered and evaluated meteorological information on a more localized level. Particularly, Amtrak and the railroads with which it contracts should ensure that adequate monitoring and/or inspection of railroad track locations is undertaken where flash floods, earth movement or generalized flooding is known to take place when localized weather information indicates severe weather conditions.

Thank you.

Mr. GLICKMAN. Thank you for your excellent statement.

I am very concerned about a couple of things in your statement. On page 5 you indicate that the Safety Board, in early 1982, went on record in response to the FRA's then proposed rulemaking to reduce—reduce, I say—existing track safety standards, and apparently they ignored your opposition to that rulemaking; is that correct?

Ms. GOLDMAN. That's correct.

Mr. GLICKMAN. What was that reduction? What did they go from to?

Ms. GOLDMAN. Well, in terms of frequency of inspections, there are a whole variety of issues that were reduced. I would hope that in the long-term analysis we're proved wrong. But it is too early yet to tell what the results of that reduction is going to be.

Mr. GLICKMAN. Yes; do you know what their reasoning was—they are here—but what their reasoning was in reducing those track safety inspections?

Ms. GOLDMAN. I think they would better speak for themselves than my speaking for them.

Mr. GLICKMAN. OK.

Then the other thing has to do with weather, where you made a recommendation, on page 9 of your testimony, in February 1983, that Amtrak—and I want to quote from your testimony—"requires that those railroads under contractual agreement to operate passenger trains adopt a system of professionally gathered and evaluated meteorological information * * *" And Amtrak's response back to you is just ridiculous. It says "Amtrak corporate operations will monitor the national weather summary so that this control can better coordinate * * *"

But let me ask you this. That was response was in June of 1983. Have you had any indication during the past year as to what Amtrak has specifically done on weather?

Ms. GOLDMAN. No, we have not, but we certainly are going to be pursuing it in the light of the recent accident in Vermont.

Mr. GLICKMAN. Now, in the beginning of your testimony, Ms. Goldman, you talked about—this committee does not have jurisdiction to go into specific accidents. They do relate to the aggregate issue of rail safety, which we are very interested in. You indicated that there seems to be a focusing on, let's say, the amount of drug residues in the blood as, let's say, pinpointing the cause of this accident in Queens. In fact, the newspaper stories this morning so indicated that. I believe that was the testimony of the Federal Railroad Administration, to kind of indicate that at least initially.

Are you basically saying that you disagree with the FRA's analysis of the Amtrak accident in New York?

Ms. GOLDMAN. Well, again, I think Mr. Riley will speak for himself. I think he did try to caution—he responded to the drug question upon question from the committee. So I think he also tried to state that no preliminary judgment should be made on the drug analysis, that there was still much to be done, and I wanted to nail that in.

In terms of ascribing it to human error, I think that has been made in the testimony yesterday. Again, while it may be easy to say it's human error, that obscures a more detailed analysis. I am sure the FRA wishes to have a detailed analysis too, and will. I wish to make the point that that's one of the things the Safety Board has beefed up its staff, in fact, on human factors and survival factors, so that we can look at that whole issue that has been quickly tossed over, that it's human error, which it is in more than 85 percent of the accidents the ascribed cause. So that we will have our staff people doing a task analysis and a variety of other things like that to try and indicate so that if there was an error on the part of the signalman, how did that occur. Was it just him or is there something in the system in terms of supervision, training, the way the system is set up, that could lead to that. It could be just a single fluke of one person. But it's too quick to make that analysis and I think we need to go much deeper.

Mr. GLICKMAN. And you will try to also focus on technology improvement as a part of that analysis?

Ms. GOLDMAN. Absolutely.

Mr. GLICKMAN. Now, let me ask you this. You kind of characterized it a bit in your statement. How generally do you characterize the FRA in terms of complying with NTSB's recommendations?

Ms. GOLDMAN. Certainly they have responded positively in many of them. I haven't got the exact percent, which I could give you. There has been a great effort in the last couple of years and I think a negotiation process, if you will, so that we make sure they understood the recommendations that we had. We had had a large number of recommendations backlogged before 2 years ago and we sat down, in fact, with the previous administrator, to try and work out to see if we couldn't get some action on those recommendations. I don't know, perhaps Mr. Storey has a better remembrance of the percentage——

Mr. STOREY. I feel, sir—your point is well taken—that we do run into problems with some of the responses. Basically, we feel the ones in the track area are probably the least responded to in a favorable manner. However, we notice, though, as time goes on, and additional accidents do occur, then the FRA will take them back into reconsideration.

Mr. GLICKMAN. Well, that's fine, as people get killed the FRA becomes more serious. But, you know, I'm trying to get a feel. The way our Government is structured, the FAA and the FRA, theoretically, have comparable roles within this Government, in terms of protecting safety. Obviously, the airline industry and the railroad industry are different; they're historically different; the way we regulate the two are different. But one would hope that the agency responsible for regulating rail safety is just as responsive to preventing people from getting killed or injured as is the agency for airline safety.

Ms. GOLDMAN. There has been certainly a good dialog in the last year or two. For example, we have been working on the alcohol issue for some period of time. We are pleased to see that the FRA has finally come forward with recommendations on that and rulemaking. They have worked closely with us in discussing their plans. So I am pleased that there has been a cooperative attitude.

Mr. GLICKMAN. I want to characterize this, go back for a moment to the proposed rulemaking on reducing existing track safety standards. Do you have any reason to believe that the failure of the FRA to adopt those suggestions that you made in any way have caused any derailments, both passenger or freight, subsequent?

Ms. GOLDMAN. I have asked that question of our staff in preparation for these hearings, and I don't think there seems to be conclusive information yet in terms of whether there have been in these particular accidents or there is going to be. I think we have not yet had something that was directly caused that we can attribute, but that's very hard to pin right back to the rule.

Mr. GLICKMAN. But from the Safety Board's position, would you characterize this as a serious omission, that the FRA did not adopt your recommendation on track safety?

Ms. GOLDMAN. Oh, I think there is much more that could be done in track safety, to improve track geometry inspections and a variety of the points that we listed. We still feel that very firmly.

Mr. GLICKMAN. So you think there was a serious omission in their not agreeing to your recommendations?

Ms. GOLDMAN. We believe so. There had been a stronger notice of proposed rulemaking that had been withdrawn, that went much closer to what we had been asking, that was under consideration at the time. That was withdrawn and then the new standards were put forward.

Mr. GLICKMAN. Now, a final question relates to the technology. What is being done, as far as you are aware, in terms of railroad technology? We talked of some of the things you recommended, in terms of grading and track structure improvements. But are you aware of whether the railroads or the FRA are doing very much in the area of ways, let's say, to better predict accidents before they occur by the use of track geometry cars, more private sector cars, a variety of things that could enhance the technology to prevent accidents?

Ms. GOLDMAN. I believe there are some studies underway, which I assume Mr. Riley will discuss in his testimony. One of the things we had asked for before this standard was changed, that some of the things be analyzed and that there be further studies before the changes were made. And I think again he can better describe the work that is being done.

Mr. GLICKMAN. A final question. Do you have any comments about how the current system, aggregate system of railroad safety and railroad maintenance and monitoring is done? In the case of Amtrak, as I understand it, most of Amtrak's track that it operates on is owned by private railroads, who in turn are responsible for inspecting that track.

Do you think that Amtrak ought to be in the position of doing its own independent inspection of that track, or there ought to be some way that the operator, the national railroad passenger service—after all, most people who take the train think that Amtrak is doing it all. I don't think they really know or care as to whose track the train is operating on.

Is there some way that we could improve the issue of Amtrak rail safety?

Ms. GOLDMAN. Well, in terms of Amtrak rail safety, when it operates as, for example, in Vermont, where Central Vermont does it, they are under contractual arrangement, and whether Amtrak hires the people to do it or uses the local people, there is no reason that the safety can be different. That's a contractual obligation and they can set—can and do set standards as to how things will be accomplished. So I don't think that they necessarily have to add more employees themselves. They can certainly do it through their contractual operations, which is the same way, taking it off the track and weather, we said make that part of your contractual agreements——

Mr. GLICKMAN. But do they do it, is my question.

Ms. GOLDMAN. I think they can certainly do much more to strengthen those contractual obligations. Again, I don't think that—this happened to be a passenger train in the case of Central Vermont, when they had the washout. That could have just as well been a freight train that was going through there and the same problem. So I think all of the railroads, not just speaking of Amtrak, because as I have stated and I think the figures show that it has been generally a safe system. But what it does indicate is that we have changed over the years the system of inspections and I think, in terms of special conditions, more needs to be done.

This track, for the track itself, had been inspected just the day before, the morning before. The conditions at that time indicated that it was safe and, indeed, it was before this special weather circumstance came along. But in Emerson, IA, and in this one, special circumstances came up in the meantime, and in the special circumstances, then there was not the help there available. That's what we're asking for.

In addition, you have backups for systems in terms of signal systems, if things go wrong, in terms of radio systems. We work in safety in terms of redundancy, and we don't feel, in that case at least, and in some other cases, you have the redundancy for assistance in unusual circumstances.

Mr. **GLICKMAN**. Like there probably is in the air system in this country.

Ms. **GOLDMAN**. Where we hope there is most of the time, yes.

Mr. **GLICKMAN**. Thank you.

Mr. Carney.

Mr. **CARNEY**. Thank you, Mr. Chairman.

Ms. Goldman, I would like to focus in again on the track safety standards. Could you for the record give us an idea of where track safety standards were before the FRA reduced those standards? You did mention scheduling inspections. What else would be involved in the reduction of those standards?

And after that, could you tell us whether your recommendation was to just leave them, leave the standards the way they were, or did you try to encourage even more strict standards?

Ms. **GOLDMAN**. We had been trying to encourage more strict standards. We were concerned with the standards. We had been asking for a strengthening of the standards and felt that some of the rules in the proposed rulemaking before 1982 would have met that. I think Mr. Storey, who has had a much longer history in the rail industry at the Board than I have, might be able—to describe a few of those areas for you.

Mr. **STOREY**. The biggest area, sir, was in the standards, in words that we call ambiguities, where they are left to the judgment of the inspector, things like "the track shall be able to sustain lateral motion sufficiently." What is this, then? Then like this accident in Philadelphia, the day comes, and if it is a sunk kink and it kicks out of line, we guess then that the track was complying with the standard up until the moment of the derailment. How does one detect, you know, sufficiency? It is words like that throughout the standards that we had taken, you know, an extreme adverse attitude toward.

The other area was on welded rail. We felt that the standard should have standards considering welded rail, continuous welded rail throughout the country. They did have a few of these items in the standards and they were dropped. There were things concerning the anchoring of welded rail, which again would allude to the circumstance of the accident in Philadelphia.

There were other ideas that were left out of the standards as to rail wear. There is no standard that says a rail can't wear for, say, 1½ inches right down its gauge side completely off. We found in accidents in Muldro and Fort Knox, KY, that the rail had excessively worn and then broke due to the normal loading of a train. It's areas like this, sir, that we have contended should be in the standards.

Mr. **CARNEY**. Am I correct in understanding that the standards that were changed in 1982 were brought about by a joint agreement between labor and management?

Ms. **GOLDMAN**. That's correct.

Mr. CARNEY. On those standards, is it required that all track be investigated by the T-10 geometry cars, or is that a decision that can be made by the individual railroad companies?

Mr. STOREY. In that area, sir, really the railroads would rather inspect the track themselves, and a number of them have their own track geometry cars. The FRA does try to contract with these railroads, and I think maybe Mr. Riley can speak to that a little bit more directly. But it does like to operate its geometry car over those routes that Amtrak operates and those hazardous material routes, but this is done in a joint effort with the FRA and the railroads.

Mr. CARNEY. My question is this: Is it required that those geometry inspecting vehicles cover track——

Mr. STOREY. No, there are no——

Mr. CARNEY [continuing]. On a scheduled basis?

Mr. STOREY. There are no requirements, sir.

Mr. CARNEY. So a railroad could neglect using that sophisticated——

Mr. STOREY. Right.

Mr. CARNEY [continuing]. Type of inspection device on its railroad bed, is that correct?

Mr. STOREY. That's correct. You will find only those railroads that probably aren't large in size and believe in the same way that probably you do that have track geometry cars. All railroads in the country do not have their own track geometry cars.

Mr. CARNEY. So then we could assume that there is railroad mileage in existence today that has never been inspected by track geometry cars?

Mr. STOREY. There are probably some miles, yes, sir.

Mr. CARNEY. Miss Goldman, this is a tough question. It can't be perhaps answered specifically. But there seems to be a rash of accidents occurring lately. The railroad system in the United States has an outstanding safety record, and you can compare it to any other mode of transportation and it stands right up on top. As I said before in my opening statement, many people choose to ride the railroads for that one single reason. They feel much more comfortable and much safer on railroads. I would not want to see that perception change in America. I think we all recognize the importance of our rail systems and the importance of that system carrying passenger types of loads.

Do you feel in recent years that the railbeds and cars and other equipment within the system have maybe deteriorated from the standpoint that we're not replacing them fast enough because of the capital costs involved and we could perhaps be more aggressive in that area?

Ms. GOLDMAN. To the contrary, there are always many improvements that can be made in the rail system. I would agree with you that the rail system is certainly a safe system and as a comparative choice for passenger transportation, it certainly is one that I would choose to make and I think most people should.

In terms of expenditure for track and trackbed and rail, there has been improvement in this area over the last several years. Certainly much more can be done to bring the system up technologywise, and I have commented on that. But in terms of the track that you're speaking of and expenditure in that area and railbed, there has been enormous expenditure over the last several years.

Mr. CARNEY. That's certainly encouraging.

Over the last several years there has been aggressive attempts, both by Government and by the railroad industry, to encourage more people to use railroad as a mode of transportation. One of those methods is to ensure people on-time scheduling, to ensure people that the railroads can compete in a time sense. For instance, the airline industry, particularly in the Northeast corridor, we see commercials on television where it is more convenient for you to travel from New York to Washington or Philadelphia to Washington or Boston to New York because you go from the hub of the city to city and, in essence, you can save time by using the railroad. Now, in order to accomplish that, we have increased the speed capabilities of these railroad cars traveling over the trackbed. That is an improvement in technology.

Now, are we keeping safety standards up with the speed increases that the railroads have been able to accomplish over the past 20 years?

Ms. GOLDMAN. There is certainly a great deal of effort that goes into that Northeast corridor in terms of making sure there are special standards that are met. There has been more activity to improve the situation on the Northeast corridor than there has been other areas. So I think there is certainly a greater emphasis that has gone into that than even other parts of the country.

Mr. CARNEY. I know on Long Island they have a passenger railroad system and many of its accidents, problems, are related to railroad crossings. You did say in your testimony—and I happen to agree with you—that they are highway accidents. But they are the bulk of the accidents, particularly the accidents that cause the loss of life.

Could you give us an idea of how many railroad crossings we might have that fit in a particularly dangerous category that——

Ms. GOLDMAN. I don't have those at the top of my head, Congressman Carney. I can supply them to you because I remember we investigated an accident, I believe it was Minneola, about 1½ or 2 years ago——

Mr. CARNEY. That's correct.

Ms. GOLDMAN [continuing]. Where a group of teenagers were killed.

Mr. CARNEY. Eight lives were lost.

Ms. GOLDMAN. In that case, that crossing was protected and the individual pulled around the gates to get on to the track. It is very hard to try and cope with that kind of thing. But at the time we surveyed the number of unprotected crossings on the Island and I can get those for you. It doesn't stick in my head at the moment.

Mr. CARNEY. Well, I think Long Island, like every region in the country, is unique in its own way. Certainly when you consider the amount of people that live in close proximity of our railroad system and have to cross it on a daily basis, we stress not just having gate markers and light markers but what we are attempting to do—and it's very, very expensive, it's about $15 million a crossing—is to have elevated crossings; thus, you eliminate the problem completely.

Now, what I am trying to do is apply that across the Nation. What type of task would that be, particularly in metropolitan areas where there is a high amount of vehicular traffic crossing these highly used railroad intersections? Do you have any statistical data on that?

Ms. Goldman. Again, I think we have looked at some of it. I know—I'm sure the FRA has it because I have heard Mr. Riley talk about it, so we can get you those statistics and how much it would cost if you went through all of the crossings and changed those. We have made recommendations sometimes to States in terms of reevaluating their formulas. There is a certain formula that they go through in many States based on the traffic flow, the number of people, the number of operations, the kinds of train operations that go through there, whether there is hazardous material and so forth. Because as you point out, it is an enormous expense, and from a public standpoint we have to decide which justify, on the basis of user potential harm, that kind of protection. That is one way to look at changing the crossings. The primary area is still to try and make the public understand that they can't outrun a train. It is just amazing to me that they don't seem to understand that.

There are other times where it is not, obviously, the fault of the individual driving. They may in rural areas, the trains, if they're freight trains, maybe obscured in terms of no lighting at the area, it's dark nights, foggy nights, and they will run into the side of a very dark boxcar at a crossing.

We still have the alcohol and drug question. People are not using all of their abilities because they are intoxicated in some way and therefore run into it.

The other area we have worked at and might be of interest to you particularly is the routing question, so that if we have had a number of accidents where an unprotected crossing hazardous material cargo, particularly oil tank, gasoline tank trucks have been using, so we have been trying to make sure, working with various trucking companies in the trucking industry that they reroute. It may take a mile or two longer to go, but so that they avoid the unprotected crossing so that we don't have the kind of tragedy that occurred in Kenner, LA, with many deaths because a gasoline tank truck blows up.

Mr. Carney. I find it amazing that statistics that I read in my opening statement, that only four out of 1,073 fatalities were passenger fatalities. You have to add to that, of course, railroad employees. But I think that is less than 100. So certainly total, less than 100 people were on the railroad cars themselves out of 1,073 who have ~~lost their~~ lives. So obviously the encounter of a railroad car by a vehicle or people living by——

Ms. Goldman. People are going to lose every time.

Mr. Carney. Each and every time, there's no doubt about it.

I think this is something we might be able to address in a public relations campaign, to bring this out. I think something——

Ms. Goldman. And there is a very active one. It just has to be able to reach more people. The National Safety Council, in cooperation with this program Operation Lifesaver that I mentioned, we're striving very hard to promote.

Mr. **Carney**. I would finally ask that if you would be kind enough to submit for the record the proposals made in 1982 and your response to them, so we, as a committee, can review precisely the two proposals and why yours were rejected.

Ms. **Goldman**. We have those available. They are rather long, and perhaps—I thought it would be a little longer than this committee might enjoy this morning.

Mr. **Carney**. Well, I recognize that, but for the record I think——

Ms. **Goldman**. We would be glad to supply that. I have that available.

[The material follows:]

29 MAR 1982

Docket Clerk
Office of the Chief Counsel
Federal Railroad Administration
Room 7321A, Nassif Building
400 Seventh Street, S.W.
Washington, D.C. 20590

Dear Sir:

The National Transportation Safety Board has reviewed the Federal Railroad Administration's (FRA) Notice of Proposed Rulemaking (NPRM), "Track Safety Standards; Miscellaneous Amendments," Docket No. RST-3, Notice No. 3, which was published at 47 FR 7275 on February 18, 1982. Since the existing minimum track safety standards were adopted in October 1971, the Safety Board has repeatedly supported the development of effective track safety standards and has recommended improvements to correct safety problems related to track conditions as identified in major railroad accident investigations and safety evaluation activities. As a result of experience gained from investigation of railroad accidents, the Safety Board appreciates the fact that the elements of track structure (rails, crossties, rock, soil, etc.) must work in concert to absorb the dynamic forces of trains in order that railroad operations may be conducted safely. Much of the present knowledge about track structure capabilities and limitations is empirical and this fact must be weighed constantly in relation to any proposed changes in the present requirements. There is no proven methodology for predicting the reaction of a track structure to the dynamic forces imposed by trains. Nor is there any scientific means for determining the interaction of the various elements of track structure such that one may determine when a particular structure is no longer safe for specific dynamic loads imposed by trains.

The accident history of railroad operations repeatedly has shown that standards relating to the track structure must include a safety margin sufficient to reflect the inability to predict, with reasonable accuracy, the effects of specific operating conditions upon safety. The Safety Board believes that the proposed standards, which are not as stringent as current standards, do not provide an adequate margin for safety; moreover even where the elements of a track structure comply with the existing or the proposed standards, the safety of the track structure is not assured. We strongly recommend that the FRA not lessen the existing track safety standards until research and testing provides clear evidence that the proposed change will not adversely affect rail safety. We are not aware of any credible test data which supports the proposed rulemaking.

Our testimony at the FRA's November 15-16, 1978 General Safety Inquiry (Docket No. RSSI-78-5, Notice No. 1) supported the development of improved track safety requirements. At that hearing, we provided information about previous Safety Board recommendations which addressed specific improvements needed in the track safety standards. More importantly, we urged that the FRA use available safety analysis techniques to systematically evaluate the existing standards to identify needed changes. Through a systematic analysis of the standards, the FRA should be able to identify those areas of the present requirements where research is necessary to develop meaningful requirements. The Safety Board, several State agencies responsible for public safety, and the Railroad Labor Executives' Association (RLEA) all testified at that hearing in support of strengthening the track safety standards as a means to reduce the number and severity of derailments.

On January 10, 1980, the Safety Board supported the FRA's 1979 NPRM for strengthening track standards (Docket No. RST-3, Notice No. 1) and provided detailed comments for further strengthening the proposed requirements to provide reasonable safety for the public and railroad employees. Review of the comments filed in response to that NPRM documents that State agencies responsible for public safety and the RLEA all supported the proposed requirements. Also, each urged the FRA to further strengthen many of the proposed requirements. The FRA's own assessment of the impact of the proposed rulemaking indicated that implementation of the proposed requirements would produce a positive economic benefit for the railroad industry by eliminating administrative regulatory burdens and also would reduce the numbers of track-caused rail accidents.

On October 7, 1981, in response to the FRA's June 25, 1981 withdrawal of the 1979 NPRM, the Safety Board took exception to the FRA's sole reliance for its decision on the impact the proposal would have on the costs of the railroad industry and its ignoring the costs to the public resulting from derailments. This limited perspective was viewed by the Board as not in keeping with the requirements of the President's Executive Order (E.O.) 12291 and the Safety Board expressed its concern that such hasty and incomplete assessments of regulatory proposals could result in the abandonment of many necessary and justified safety requirements. Additionally, the Safety Board urged the FRA to keep in mind its obligation to represent the safety interests of the public and to determine not only the cost impact of the proposed regulations upon the industry but also the costs of risks imposed upon the public if existing standards were not further improved.

In the 1979 NPRM, the FRA documented the need for reducing the disproportionate number of accidents caused by track defects (42 percent of the total number of train accidents), the need for eliminating ambiguities in the existing regulations, and the critical need for providing incentives for railroads to use scarce resources in the most effective manner to eliminate safety hazards. In 1979 and 1980, for the first time, reductions in the total railroad accident statistics were recorded; however, the number of track defect-caused accidents remains excessively high. The data do not reflect any significant improvement in safety in the railroad industry to invalidate the needs cited by the FRA in its 1979 NPRM. While the FRA now is developing procedures for the use of safety analyses, we are concerned that no systematic analyses were used for evaluating the present requirements. We remain convinced that if the FRA is to make rational decisions about changes in the existing regulations, such changes must be supported by careful problem identification, consideration of alternatives, and a plan for systematic evaluation of any changes which are implemented. This also is the approach to regulatory reform we believe is contemplated by E.O. 12291.

The Safety Board disagree~~s~~ with the FRA's characterization of the ~~present~~ NPRM as a "limited modification" and its assertion that the proposed changes ". . .will only have a direct economic impact on railroads. . . ." Certainly any increase in the number of accidents attributed to the proposed regulatory changes directly will affect the public as well as the railroad industry. The Safety Board believes that the proposed lessening of track safety standards is likely to increase the number of track-caused accidents and, based on the accident history, two or three accidents which involve a dramatic release of hazardous materials are likely to exceed the economic criterion of E.O. 12291 that defines a proposed rulemaking as a "major" action, e.g., accidents such as the derailment at Thermal, California on January 7, 1982; the derailment at Muldraugh, Kentucky, on July 26, 1980; the derailment at Pensacola, Florida, on November 9, 1977; and the derailment at Belt, Montana, on November 26, 1976.

The FRA acknowledges that it has not quantified the economic effect of this rulemaking proposal. Also, neither the FRA nor the Association of American Railroads (AAR) and the RLEA, which suggested the proposed regulatory changes, have provided any research or other factual support to document the effect of the regulatory proposal upon public and railroad safety. Consequently, because the evaluation required by the DOT Regulatory Policies and Procedures (RPP) for assessing the economic consequences, the economic costs to various specified parties, and the anticipated benefits and impacts before issuing a regulatory proposal has not been performed, we can only conclude that the significance of the regulatory proposal is not known. In our view, the required DOT evaluation would have shown that this rulemaking action meets the criteria of E.O. 12291 for "major" actions which require development of a Regulatory Impact Analysis. The Safety Board urges the FRA to perform a comprehensive evaluation of the effects of the present proposal and make it available for public comment prior to acting further on this NPRM.

Enclosed are section-by-section comments, a summary of previous relevant Safety Recommendations, and abstracts of related accident investigations for your further consideration. Also, we offer the following general observations about the proposed rulemaking:

1. Safety Board investigations of railroad accidents have disclosed that a major factor affecting the safety of railroad operations is inadequate track inspections. Subjective appraisals have ignored or missed locations where a combination of deteriorating

conditions can cause derailments even though the individual conditions inspected were found to comply with the present track safety standards. Investigations have revealed that some track inspections were being performed routinely in high rail vehicles moving at speeds of 15 - 20 mph only to satisfy inspection frequency requirements, with the inspections directed only at those conditions identified by the track safety standards as defects. Such inspections failed to consider additional factors which are not referenced in the standards or to evaluate the combined effect of defects. Both of these practices are more frequently being found to have been the cause of track accidents. For example, inspections have been conducted over rails which have been subjected to millions of gross tons of service; but inspectors never reported the numerous head checks, severe engine burns, extensive shelling or other track deterioration indicators, nor given consideration to the possibility that the freqency of internal-defect inspections should be increased. The failure to report such conditions has precluded the detection of incipient rail fractures and has resulted in the derailment of a passenger train and freight trains transporting hazardous materials. In effect, the current standards allow track to be evaluated as complying with the Federal minimum standards so long as specific deficiencies are within tolerance without requiring consideration of the overall condition of the track as safe or unsafe. Only when an accident occurs does anyone look closely enough to determine that a clustering of defective cross ties or some other combination of conditions was overlooked by the track inspector - an inspector who never got close enough to evaluate the condition of the track structure because periodic walking inspections are no longer performed.

2. From our review of comments provided by the AAR and the RLEA concerning the track safety standard changes proposed since 1979, we note that the industry's statements are not supported by research or other factual data of record. For reasons unknown to the Safety Board, the RLEA's position has changed from supporting the strengthening of the track standards to supporting a reduction in the requirements of the standards. Also, it is important to note that the AAR's position relative to specific issues has not been consistent and there exists in the record no factual basis for the various changes in position. For example, in responses included in Docket RST-3, the AAR has recommended differing values for the maximum allowable gage. Also, the AAR has changed its position from support of the existing rail anchoring requirements to the present position of supporting the complete deletion of any requirements for anchoring.

3. Although several of the standards proposed for deletion are not related directly to safety, many of them provide information that should alert management to potential safety problems. For instance, while rail-end batter is not a directly related to safety, its occurrence points to the fact that crosstie and ballast conditions are approaching failure at that joint. As another example, tie plate motion and rail seating may be indicative of lateral rail displacements.

Additional factors not satisfactorily dealt with in the existing and proposed track standards also affect the capabilities of a specific track structure. These include the rate-of-change in allowable geometric variations, measurements which are taken under static conditions rather than dynamic load conditions, anchoring effectiveness, and the practical experience and qualification of track inspectors. In this regard, the FRA should consider placing a greater emphasis on the provisions of 49 CFR 213.1 wherein combinations of track conditions, which are not defects, may be considered as deviations from the standards.

4. Historically, the FRA's standards have utilized tolerances and deviations as the yardstick for measuring whether or not a track structure is considered safe. As long as these standards are based upon design considerations, the standards must continue to assure reasonable safety under all foreseeable conditions by maintaining sufficiently stringent criteria. Because the accident record indicates that this approach has not been successful, we believe the FRA should evaluate other alternatives such as performance oriented standards or the development of strict certification requirements for qualifying track inspectors and through regulation, increasing the responsibility and authority of these inspectors for track safety.

Until the FRA develops alternate means for assuring a reasonable level of public safety by increasing the industry's track structure inspection quality and requiring prompt repairs of deficiencies which may cause derailments, the track safety standards will be the mainstay of railroad safety. Therefore, it is imperative that the existing minimal track safety standards not be derogated.

The Safety Board appreciates this opportunity to comment on your rulemaking proposal.

Respectfully yours,

ORIGINAL SIGNED BY
JIM BURNETT

Jim Burnett
Acting Chairman

Enclosures

Zielinski/Gossard/Storey/Batten:dds:3/10/82
cc: C, ME-1, 2, 3, MD-1, 2, GC-1, GAPA-1, AI-1,
AI-40, ES-1, TE-1, 2, 3, 4

National Transportation Safety Board
Section-By-Section Comments
on Docket No. RST-3, Notice No. 3

1. Section 213.3 Application

Paragraph (b)(2)

The current exclusion of track used for commuter or other short-haul passenger service in a metropolitan or suburban area from the application of these rules should be modified. Recently, an accident at Southhampton, Pennsylvania, on January 2, 1982, on Southeastern Pennsylvania Transportation Authority's property focused attention to the concern that no responsible Federal or State agency had clear authority to provide safety oversight either through regulations or inspections of SEPTA's commuter railroad passenger operations. Because SEPTA is classified as a rail rapid transit property, the railroad segments over which it operates commuter trains are not subject to the FRA's requirements. However, the Federal Railroad Safety Act of 1970 (P.L. 91-458), in Section 101 Declaration of Purpose, states ". . .that the purpose of this Act is to promote safety in all areas of railroad operations and to reduce railroad related accidents. . . ." In the previous Notice of Proposed Rulemaking, Docket No. RST-3, Notice No. 1, published September 6, 1979 in 44 FR 52104, the FRA recognized that it had authority, acknowledged the need for improved track safety for commuter operations and stated:

> "Since issuance of the standards in 1971, FRA has encountered significant unsafe conditions on track used exclusively for local commuter operations that are conducted by major railroads. The absence of directly applicable regulations has hampered FRA's efforts to obtain prompt remedial action. Therefore, all track used by railroads for commuter service (less than one percent of the total railroad system) would be made subject to the Track Safety Standards."

The Safety Board is aware that the FRA has been precluded from applying its safety standards to urban mass transit systems that are self-powered electric units which are lighter than railroad cars and operate over other than standard gage rails (Chicago Transit Authority v. Flohr, 570 F. 2nd 1305 7th Cir., 1977). This decision did not eliminate the FRA's responsibility for assuring that the Federal track safety standards be applied uniformly throughout the Nation to commuter and short-haul passenger operations which are operating over standard gage track and which are part of a railroad system of transportation. By continuing to except commuter or other short-haul passenger service, the FRA is not fulfilling the stated purpose of the Federal Railroad Safety Act of 1970.

2. Section 213.4 Excepted Track

The Board has the following comments on specific paragraphs:

Paragraph (b): The Safety Board believes there is no proven rationale for assuming that a 30-foot displacement from an adjacent track offers a safe enchroachment zone, e.g. two opposing 10 mph trains with 22-foot separation (30-foot centers) may well come into collision if one derails. Additionally, the proposal provides only one foot of additional separation (31 feet) between high speed track (on which transport of passengers and hazardous materials is permitted) and substandard "excepted" track. This distance appears particularly arbitrary and inadequate. For at least one case, on April 27, 1972, a freight train derailed from a yard track at a speed of approximately 8 mph. Shortly thereafter a passenger train on a main track which was 42 feet from the yard track collided with the derailed freight train. In our review, the allowable proximity (distance in feet) of excepted track to high speed mainline track has not been sufficiently addressed in the proposal.

Paragraph (d): Track proposed to be "excepted" may be located in areas where large numbers of persons are employed or in built-up areas which include residences, public use buildings such as schools and hospitals, and other facilities in proximity to the "excepted track" such that public losses are likely should hazardous materials be released. The Safety Board does not concur in the implications of the FRA's assessment that ". . .only property would be seriously endangered by derailments on excepted track segments." We recommend that the FRA establish exposure criteria that will limit the industry's use of "excepted track" to track segments where the release of hazardous materials would not affect public safety adversely.

Paragraph (e)(3): Placarded DOT hazardous materials should not be routed over substandard track. Adoption of this proposed paragraph fails to recognize adequately the hazards associated with slow speed train operations. In 1979 and 1980, accident statistics indicate that nearly 74 percent of the total number of track-caused accidents occured at speeds of 10 mph or less. Of the 99 accidents which occurred in 1979 and 1980 in which hazardous materials were released, 41 percent occurred on slow-speed track which under this section, could be designated as "excepted track." The Safety Board strongly recommends that the FRA preclude any movement of placarded hazardous materials over substandard track.

3. Section 213.5 Responsibility of track owners and Section 213.9 Class of track: Operating Speed Limits

The changes proposed by these two sections would permit the railroads to operate, for a time of not more than 30 days, over any segment of track without regard to the hazards that might be involved since the requirements of the track safety standards for providing at least a minimally safe system could be waived. The judgment as to the adequacy of the track for its intended use and the interim operating restrictions will vary based upon decisions made by the person who is designated under Section 213.7(a)(1)(i). This leads to the question of what formal guidelines will railroad management be required to provide for persons designated under Section 213.7 to determine if hazardous materials can be safety transported over known track hazards. The Safety Board cannot agree that rail safety will be enhanced by allowing operations on track that does not meet the existing minimal standards and permitting the decisions to be made on the basis of an individual's experience and preference without any Federal guidelines or performance criteria upon which to base these decisions. These individuals will be subjected to pressures by management in its quest to expedite movement of trains. The individuals should have more definite criteria to fall back on in such circumstances.

The Track Safety Standards were adopted in order to achieve at least an acceptable minimum level of safety. The Safety Board believes that the changes contemplated in proposed Sections 213.5 and 213.9 will result in non-uniform, decisions which will adversely affect public safety.

4. Section 213.53 Gage

The tolerances proposed for gage exceed those currently established by most responsible railroads as published in their instructions to maintenance of way employees. The changes suggested are not supported by any factual data which demonstrate that relaxation of this rule will not affect railroad safety adversely. The accident record for gage related derailments certainly does not support a relaxation of this rule. In 1980, there were 704 accidents caused by wide gage which resulted in damages exceeding $11 million.

5. Section 213.109 Crossties

A reasonable provision for maximum tie spacing should be retained. The proposed change removes the existing table in Section 213.109(c) which specifies the "maximum distance between nondefective ties (center to center)." The elimination of the tie spacing requirements may result in a determination that track with relatively few good crossties fulfills the requirements of this section if specific geometric parameters are maintained. Unfortunately, the geometric parameters are not measured under load conditions, hence an invalid assumption regarding the adequacy of track strength could be made. For example, at a 19½-inch spacing, track contains 24 ties per 39 feet. The existing track standard requires only five effective ties for Class 1 track and is specific that any of the five must be within 100 inches of another effective tie. In the new suggested section, in the worst case, a 97.5-inch cluster of 5 effective ties spaced 31 feet apart is acceptable. The Safety Board finds no factual justification for the deletion of spacing requirements.

The Safety Board believes that the FRA has not provided an adequate rationale for requiring only one "good" crosstie under a joint for Class 3 through 6 track (paragraph (d)). A requirement for only one marginally nondefective crosstie under a joint of Class 6 track, given the maximum geometric variations allowed under the proposed standards, would degrade safety.

Even though it is desirable to eliminate specific references to timber crossties from the proposed Section, the use of the historic definitions for timber crosstie defective conditions is not applicable to crossties made of manufactured materials. For example, concrete crossties will exhibit different indications when defective and the FRA should develop appropriate criteria for determining if a concrete crosstie should be replaced when partially broken through, split or otherwise impaired, or has fastener movement of up to ½ inch.

7. Section 213.113 Defective rails

In 1980 the accident statistics showed 662 derailments as a result of rail defects which resulted in damages to railroad property in excess of $28 million. The changes proposed in this section will relax the remedial actions required by railroads to minimize the hazards caused by defective rails. One of the reasons stated for relaxing the standard (which regrettably is in accord with the Safety Board's experience) is that railroads limit their inspections to avoid the operational constraints placed upon them by the current standards. If this is the case, the FRA should impose more stringent requirements to insure that the railroads inspect for internal rail defects, not relax the standards.

The Safety Board does not agree with the following proposed remedial actions:

1. Replacement of the existing 10 mph restriction for operations over rails that have transverse and compound fissure defects with maximum allowable speeds subjectively determined by a person designated under Section 213.7(a)(1)(i) is a degradation of safety. For example, a designated person having only a minimum of one year's supervisory experience in railroad track maintenance can decide to move trains at maximum speeds over a transverse fissure defect. Accident statistics show that there were 122 accidents caused by transverse/compound fissures in 1980 with damages in excess of $7.6 million. The proposed remedial action "C" allows the maximum train speed (up to 110 mph) for track containing a detail fracture after application of an angle bar with as little as two bolts, even though a detail fracture is known for its tendency to fail suddenly.

2. In general, the Safety Board finds that remedial action "B" of the proposed standards applies to nearly every serious internal rail defect. Accident statistics for these defects show the following experience for 1980:

	1980 accidents
Transverse/compound fissure	122 accidents
Bolt hole cracks	56 accidents
Head web separations	105 accidents
Vertical split head	130 accidents

The FRA has presented no substantiation that the proposed standards will assure the safe operation of trains over defective track through use of remedial action B. Since the complete failure of rail from internal defects is unpredictable and can lead to catastrophic accidents which may involve passengers or hazardous materials, the Board recommends that the FRA reevaluate its position that the proposed remedial actions will improve safety.

3. Other restrictions proposed for removal which will affect safety adversely are:

   - Removal of the 10-mph restriction upon an engine burn fracture in a rail before applying angle bars.

   - Increase in the speed limit restriction from 50 mph to 60 mph on track with defective welds, horizontal split heads, split webs and head web separations.

   - Deletion of Section 213.113(b) since shelly spots, head checks, corrugations, and flaking are indicators of a possible rail failure from a detail fracture.

Section 213.127 Rail fastenings

The revised section does not provide any guidelines for measuring compliance. While we concur with the FRA's effort to change the focus of this section from track spikes to rail fastenings, it is vague and unenforceable.

Section 213.123(b) Tie plates

This section should be retained. The subject rulemaking proposal does not advance any compelling reasons, from a safety viewpoint, to delete the current requirement.

Section 213.119 Continuous Welded Rail

This section should be retained, strengthened, and enforced because rail temperature is an important safety consideration. Even the subject rulemaking proposal acknowledges the importance of controlling thermal stress in continuous welded rail; but it fails to propose action for accomplishing needed controls.

Section 213.125 Rail Anchoring

Rather than delete this section, public safety would be better served by establishing an objective measure to quantify the term "effectively controlled." Rail anchoring is an essential safety device to insure lateral track stability. The Safety Board believes the current standard should be retained until a better one is developed.

Section 213.105 Ballast; disturbed track

The Safety Board believes that adequate justification has not been advanced for the proposed deletion of this section.

Section 213.205(b) Derails

Inasmuch as this requirement does not constitute a compliance burden and is an enhancement to safety, we believe it should be retained.

The Safety Board has no specific safety objections to the deletion of the following requirements:

-Section 213.61
-Section 213.117
-Section 213.129
-Section 213.131
-Section 213.207

TRACK SAFETY ACCIDENTS
ACCIDENT ABSTRACTS
-- AS OF 3/08/82 --

LOG NUMBERS	ABSTRACTS
R-0006	ABOUT 9:30 P.M., JANUARY 1, 1968, PENNSYLVANIA WESTBOUND FREIG TRAIN PR-11A, CONSISTING OF 98 CARS AND A FIVE-UNIT DIESEL-ELECTRIC LOCOMOTIVE, WAS PASSING DUNREITH, INDIANA, AT 42 MILES PER HOUR WHEN THE TRAILING WHEELS OF THE 88TH CAR, AN EMPTY TANK CAR, AESX 850, DERAILED AT A BROKEN RAIL NEAR THE EASTERN EDGE OF THE TOWN. AT THE SAME TIME, EASTBOUND FREIGHT TRAIN SW-6, CONSISTING OF A FIVE-UNIT DIESEL-ELECTRIC LOCOMOTIVE AND 106 CARS, WAS MOVING EASTWARD AT 32 MILES PER HOUR ON THE ADJACENT TRACK.
R-0007A	THE NATIONAL TRANSPORTATION SAFETY BOARD HAS BEEN CONDUCTING A INVESTIGATION OF THE DERAILMENT ACCIDENT TO PENN CENTRAL TRAIN SECOND 115, WHICH OCCURRED AT GLENN DALE, MARYLAND ON JUNE 28, 1969.THE INVESTIGATION IS CONTINUING; HOWEVER, SOME FACTS HAVE BEEN SUFFICIENTLY DETERMINED TO PROVIDE THE BASIS FOR AN ACCIDENT PREVENTION RECOMMENDATION BY THE SAFETY BOARD TO THE PENN CENTRAL COMPANY.
R-0008	SOUTHERN RAILWAY TRAIN 154 WAS WRECKED AT LAUREL, MISSISSIPPI, ON JANUARY 25, 1969, AT ABOUT 4:15 A.M., WHEN 15 TANK CARS OF LIQUEFIED PETROLEUM GAS DERAILED. THE TRAIN WITH FOUR DIESEL- ELECTRIC LOCOMOTIVE UNITS, 139 CARS AND CABOOSE WAS MOVING NORTHWARD AT ABOUT 30 MILES PER HOUR WHEN THE WEST WHEEL ON THE LEAD TRUCK OF THE 62ND CAR IN THE TRAIN BROKE. THE WHEEL WHICH BROKE AS IT WAS PASSING OVER THE CROSSING OF THE GULF, MOBILE, AND OHIO RAILROAD, DERAILED ABOUT 256 FEET NORTH OF THE CROSSING, AND THE TRAIN CONTINUED NORTHWARD FOR ABOUT 2,146 FEET BEFORE THE 62ND CAR AND 14 LOADED TANK CARS BEHIND IT WERE DERAILED AND WRECKED.
R-0009	AS YOU KNOW, THE SAFETY BOARD RECENTLY CONDUCTED A PUBLIC HEARING AS PART OF THE INVESTIGATION OF THE PENN CENTRAL DERAILMENT AT GLENN DALE, MARYLAND, ON JUNE 28, 1969. TESTIMONY AT THE HEARING REVEALED THAT THE OHSGT CONTRACT WITH THE PENN CENTRAL FOR THE HIGH-SPEED PASSENGER TRAIN DEMONSTRATION BETWEEN WASHINGTON AND NEW YORK RELATES TRACK STANDARDS TO A FORMER PENNSYLVANIA RAILROAD DOCUMENT. IT ALSO APPEARS THAT ALTHOUGH THE CONTRACT PROVIDES THAT THE RAILROAD SHALL TAKE PROPER SAFETY AND HEALTH PRECAUTIONS TO PROTECT THE PUBLIC, THERE IS NO BASIS IN WRITTEN DOCUMENTATION OR STANDARDS BY WHICH OHSGT CAN INSURE THAT THIS SAFETY PORTION OF THE CONTRACT, AS IT RELATES TO TRACK CONDITION, IS BEING FULFILLED.

LOG NUMBERS	ABSTRACTS
R-0011	THE "SILVER STAR," OPERATING AS PENN CENTRAL TRAIN 2ND 115, DE ON PENN CENTRAL TRACKS AT GLENN DALE, MARYLAND, ABOUT 1:23 P.M., JUNE 28, 1969. AMONG THE 541 PASSENGERS IN THE 18 CARS, 144 PERSONS WERE TRANSPORTED TO AREA HOSPITALS, 12 OF WHOM WERE ADMITTED. TOTAL ESTIMATED DAMAGES, EXCLUDING PERSONAL INJURIES WERE IN EXCESS OF $300,000.
R-0017	TRAIN NO. 10/76 DERAILED ON RICHMOND, FREDERICKSBURG AND POTOM (RF&P) TRACKS NEAR FRANCONIA, VIRGINIA, AT APPROXIMATELY 12:10 A.M. ON JANUARY 27, 1970. OF THE 101 PASSENGERS IN THE 10 CARS, THREE WERE KILLED, FIVE INCURRED INJURIES REQUIRING HOSPITALIZATION AND 45PERSONS WERE TREATED FOR LESS SERIOUS INJURIES. TOTAL ESTIMATED DAMAGE, INCLUDING PERSONAL INJURIES, APPROXIMATED $637,050.
R-0018	AT ABOUT 6:30 A.M., ON FEBRUARY 18, 1969, CHICAGO, BURLINGTON, QUINCY TRAIN NO. 64 DERAILED THE 72ND TO THE 90TH CARS, INCLUSIVE, AT A TURNOUT LOCATED ON THE SPIRAL OF A 2 CURVE AS THE TRAIN WAS ENTERING CRETE, NEBRASKA, AT A SPEED OF ABOUT 52 MILES PER HOUR. THEDERAILED CARS STRUCK STANDING CARS ON A SIDING SOUTH OF THE MAIN TRACK AND THE CARS OF TRAIN 824 STANDING ON A TRACK NORTH OF THE MAIN TRACK. A TANK CAR IN TRAIN 824 WAS COMPLETELY FRACTURED ON IMPACT WITH THE DERAILED CARS WHICH RELEASED THE LADING OF 29,200 GALLONS OF ANHYDROUS AMMONIA INTO THE ATMOSPHERE. A GAS CLOUD WAS FORMED WHICH BLANKETED THE SURROUNDING AREA FOR A CONSIDERABLE TIME DUE TO THE WEATHER CONDITIONS. THREE TRESPASSERS RIDING ON TRAIN 64 WERE KILLED AS A RESULT OF THE DERAILMENT AND SIX PEOPLE WERE KILLEDAND 53 WERE INJURED AS A RESULT OF EXPOSURE TO THE CLOUD OF AMMONIA.THE SAFETY BOARD DETERMINED THAT THE DERAILMENT WAS CAUSED BY THE MOVEMENT OF A RAIL OF THE TURNOUT DUE TO LATERAL FORCES PRODUCED BY THE LOCOMOTIVE AS IT MOVED OVER TRACK ALIGNMENT AND SURFACE DEFICIENCIES OF THE TRACK. THE COMPLETE FRACTURE OF THE TANK CAR ON IMPACT WAS CONTRIBUTED TO BY THE BRITTLENESS OF THE STEEL OF THE CARCAUSED BY THE LOW AMBIENT TEMPERATURE.
R-0021	THE REPORT REVIEWS THE INITIAL TRACK SAFETY STANDARDS PROPOSED THE FEDERAL RAILROAD ADMINISTRATION IN RESPONSE TO THE MANDATE OF THE FEDERAL RAILROAD SAFETY ACT OF 1970. THE REPORT DISCUSSES THE RISKS INVOLVED IN PROMULGATING NONOBJECTIVE, INCOMPATIBLE, OR NONADAPTABLE STANDARDS AND SUGGESTS ALTERNATE APPROACHES THAT MAY PROMOTE EFFECTIVE AND ENFORCEABLE TRACK SAFETY STANDARDS. THE REPORTRECOMMENDS THAT STANDARDS NOT BE ADVANCED UNLESS THEY ARE OBJECTIVE,COMPATIBLE WITH THE SYSTEM, AND ADAPTABLE TO

LOG NUMBERS	ABSTRACTS
	CIRCUMSTANCES, INCLUDING CHANGES IN TECHNOLOGY. ADDITIONAL RECOMMENDATIONS ARE DIRECTED AT METHODS OF STRENGTHENING THE STANDARDS INCLUDING SUCH ITEMS AS DEFINITIONS, AND THE INCLUSION OF STANDARDS FOR THE PROMOTION OF SAFETY AT GRADE CROSSINGS AND REDUCING THE INCIDENCE OFRAIL FAILURE.
R-0026	AT 8:50 P.M., OCTOBER 8, 1970, PENN CENTRAL TRANSPORTATION COM FREIGHT TRAIN DERAILED NEAR SOUND VIEW, CONNECTICUT. FREIGHT CARS OBSTRUCTED TRACK IN THE PATH OF PENN CENTRAL PASSENGER TRAIN. THE PASSENGER TRAIN STRUCK THE FREIGHT CARS, PUNCTURING AN LPG TANK CAR DESIGNATED AS 'EMPTY.' THE DERAILED UNITS OF THE PASSENGER TRAIN PASSED THROUGH IGNITED GASES FROM THE PUNCTURED TANK CAR AND CROSSEDA RAILROAD BRIDGE. TRAIN CREWMEMBERS AND PASSENGERS WERE INJURED. THE SAFETY BOARD HAS DETERMINED THAT THE PROBABLE CAUSE OF THE DERAILMENT OF THE FREIGHT TRAIN WAS THE BREAKAGE OF A TRUCK SIDE OF A CAR ON THE FREIGHT TRAIN WHICH FOLLOWED A PROGRESSIVE FATIGUE CRACK FAILURE. THE BREAKAGE OF THE TRUCK SIDE RESULTED IN DAMAGE TO A TURNOUT, WHICH CAUSED DERAILMENT OF THE FOLLOWING CARS. THE CAUSE OF THE COLLISION TO THE PASSENGER TRAIN WAS THE OBSTRUCTION OF TRACKNO. 2 BY CARS OF THE FREIGHT TRAIN. THE BOARD CONCLUDED INDUSTRY CONTROLS TO PREVENT APPLICATION OF IMPROPER CAR COMPONENTS ARE INADEQUATE, EMPTY TANK CARS MAY BE HAZARDOUS, AND SUGGESTED THAT THEINDUSTRY SHOULD INCORPORATE CRASHWORTHY CONCEPTS, IMPROVE COMMUNICATION AND EQUIPMENT DESIGN, AND CONTROLS OVER MAINTENANCE, RETIREMENT, AND TESTING OF EQUIPMENT COMPONENTS. THE BOARD REQUESTEDTHAT BRIDGE STANDARDS AND JOINT CORRIDOR USAGE BE REVIEWED.

LOG NUMBERS	ABSTRACTS
R-0038	AT 10:17 P.M., ON APRIL 27, 1972, EIGHT CARS IN PENN CENTRAL FREIGHT TRAIN B-4 DERAILED AS THE TRAIN WAS MOVING AT ABOUT 8 M.P.H.INTO THE POTOMAC YARD IN ARLINGTON, VA. ONE OF THE DERAILED CARS FOULED THE ADJACENT NO. 2 MAIN TRACK OF THE RICHMOND, FREDERICKSBURGAND POTOMAC RAILROAD COMPANY AND WAS STRUCK BY SOUTHERN RAILWAY PASSENGER TRAIN NO. 6 ABOUT 6 TO 8 MINUTES LATER. THE FOUR-UNIT DIESEL-ELECTRIC LOCOMOTIVE OF THE PASSENGER TRAIN AND THE THREE OCCUPIED PASSENGER CARS WERE DERAILED. THERE WERE NO SERIOUS INJURIES. THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINED THAT THE PROBABLE CAUSE OF THE DERAILMENT OF THE FREIGHT CARS WAS A DEFECTIVE RAIL, WHICH BROKE WHILE THE TRAIN WAS PASSING OVER IT. THE PROBABLE CAUSE OF THE COLLISION BETWEEN THE PASSENGER TRAIN ON THE ADJACENT MAIN TRACK AND THE DERAILED B-4 FREIGHT CAR WAS THAT THE CREWMEMBERS OF B-4 DID NOT FLAG THE PASSENGER TRAIN AS THEY WEREREQUIRED TO DO BY THE OPERATING RULES.
R-0048	THE REPORT IDENTIFIES BROKEN RAILS AS THE LARGEST SINGLE CAUSE 1972) OF TRAIN ACCIDENTS AND SUGGESTS THAT THE PROBLEM WILL MAGNIFY.THE STUDY ANALYZES THE CURRENT MEANS FOR CONTROLLING RAIL FAILURES, SUCH AS RAIL MANUFACTURE, USE, INSPECTION, RESEARCH, AND REGULATION.RECOMMENDATIONS ARE DIRECTED TO THE FEDERAL RAILROAD ADMINISTRATION TO REVISE ACCIDENT REPORTING METHODS, TO DETERMINE THE REASON FOR THE DRASTIC INCREASE IN TRAIN ACCIDENTS RESULTING FROM BROKEN RAILS,TO PROMULGATE ADDITIONAL REGULATIONS PRESCRIBING RAIL USE AND MAINTENANCE, TO DEVELOP CRITERIA FOR RAIL INSPECTION, AND TO INITIATE RESEARCH OF RAIL AND RAIL FLAW DETECTION METHODS. RECOMMENDATIONS ALSO ARE DIRECTED TO THE RAILROAD INDUSTRY TO INITIATE RAIL RESEARCH, TO ACCUMULATE RAIL FAILURE STATISTICS, AND TO INSTITUTE TRACK MAINTENANCE POLICIES THAT WILL REDUCE THE NUMBER OF TRAIN ACCIDENTS RESULTING FROM BROKEN RAILS.
R-0051	AT 8:30 A.M., ON SATURDAY, DECEMBER 1, 1973, MISSOURI PACIFIC RAILROAD COMPANY FREIGHT TRAIN EXTRA 615 SOUTH (TRAIN DMX) ENTERED COTULLA, TEXAS. TRAIN DMX WAS TRAVELING ON A NONSIGNALIZED MAIN TRACK AT A SPEED OF 35 TO 40 MPH. JUST AFTER IT PASSED OVER A GRADE CROSSING, THE TRAIN WAS DIVERTED THROUGH A SWITCH ONTO AN ADJACENT TRACK WHERE AN UNMANNED LOCOMOTIVE, A CABOOSE, AND 11 CARS WERE STANDING. TRAIN DMX COLLIDED WITH THE STANDING LOCOMOTIVE BEFORE ANY APPRECIABLE BRAKING. THE COLLISION DERAILED ALL OF THE LOCOMOTIVE UNITS AND 29 RAILROAD CARS. THREE CREWMEMBERS WHO WERE RIDING IN THE LEAD LOCOMOTIVE UNIT OF TRAIN DMX

LOG NUMBERS	ABSTRACTS
	WERE KILLED. THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINES THAT THE PROBABLE CAUSE OF THIS ACCIDENT WAS THE ESTABLISHMENT OF A COLLISION ROUTE FOR TRAIN DMX BY THE UNAUTHORIZED OPERATION OF A SWITCH BY PERSONS UNKNOW. CONTRIBUTING TO THE COLLISION WERE RAILROAD OPERATING PRACTICES WHICH AUTHORIZE ENGINEERS TO OPERATE TRAINS AT SPEEDS AT WHICH THEY COULD NOT STOP SHORT OF A SWITCH TARGET WHICH INDICATES THE SWITCH IS IMPROPERLY ALIGNED. CONTRIBUTING TO THE SEVERITY OF THE COLLISION WAS THE FACT THAT THE CREWMEMBERS OF THE LOCOMOTIVE OFTRAIN DMX DID NOT IDENTIFY THE OPEN SWITCH AND APPLY THE TRAIN'S BRAKES SOON ENOUGH TO SLOW THE TRAIN.
R-0053	ABOUT 4:20 P.M. ON FEBRUARY 12, 1974, DELAWARE AND HUDSON RAIL FREIGHT TRAIN NWB-4, DERAILED AS IT MOVED NORTHWARD AROUND A 3 30' CURVE JUST NORTH OF ONEONTA, NEW YORK. OF THE DERAILED CARS, SEVEN WERE TANK CARS LOADED WITH LIQUEFIED PETROLEUM GAS (LPG). THE TANK OF ONE OF THE CARS SPLIT OPEN IN THE DERAILMENT, AND THE ESCAPING LPG IGNITED. FOUR OF THE REMAINING TANK CARS RUPTURED ABOUT 30 MINUTES AFTER THE DERAILMENT. THE ENSUING EXPLOSIONS AND FIRE INJURED 54 FIREMEN AND MEMBERS OF THE PRESS. THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINES THAT THE PROBABLE CAUSE OF THIS ACCIDENT WAS THE INABILITY OF THE TRACK TO RESIST THE LATERAL FORCES WHICH CANTED THE OUTSIDE RAIL OUTWARD AND WIDENED THE GAGE OF THE TRACK. THESE FORCES WHICH WERE INDUCED AT THE THIRD LOCOMOTIVE UNIT RESULTED FROM THE EMERGENCY APPLICATION OF THE BRAKES WHEN THE TRAIN WAS SEPARATED BETWEEN THE THIRD AND FOURTH CARS AS IT ENTERED THE 3 30' CURVE. THE TRAIN SEPARATED AS A RESULT OF THE BROKEN CENTER SILL ON THE FOURTH CAR.
R-0054	AT 4:57 A.M. ON JULY 5, 1974, AMTRAK TRAIN NO. 4-C WAS OPERATI THE TRACKS OF THE ATCHISON, TOPEKA, AND SANTA FE RAILWAY COMPANY JUST EAST OF MELVERN, KANSAS. AS THE TRAIN MOVED OVER A TURNOUT LEADING FROM THE SOUTH MAIN TRACK TO A SIDING LOCATED BETWEEN THE TWO MAIN TRACKS, THE REAR 13 CARS OF THE 18-CAR TRAIN DERAILED. THE REAR SIX CARS TURNED OVER, SLID DOWN AN EMBANKMENT, AND CAME TO A STOP ON THEIR SIDES. FIFTEEN EMPLOYEES AND 87 PASSENGERS WERE INJURED AS A RESULT OF THE ACCIDENT. ONE OF THE INJURED PASSENGERS DIED SEVERAL WEEKS LATER. THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINES THAT THE PROBABLE CAUSE OF THE ACCIDENT WAS THE BROKEN CLOSURE RAIL OF THE TURNOUT LEADING FROM THE SOUTH MAIN TRACK TO THESIDING. THE INSUFFICIENT STRENGTH OF THE TRACK BOLT AND THE APPARENTSTRESSED CONDITION OF THE RAIL CONTRIBUTED TO THE CAUSE OF THE BROKEN RAIL.

LOG NUMBERS	ABSTRACTS
R-0076	ABOUT 12:50 P.M. ON OCTOBER 1, 1975, 1 LOCOMOTIVE UNIT AND 11 OF AMTRAK TRAIN NO. 315 DERAILED ON THE LOUISVILLE AND NASHVILLE RAILROAD COMPANY'S TRACK NEAR PULASKI, TENNESSEE. OF THE 69 PERSONS ON THE TRAIN, 31 WERE INJURED. PROPERTY AND EQUIPMENT DAMAGE AMOUNTED TO ABOUT $1,067,000. THE NATIONAL TRANSPORTATION SAFETY BOARD DETERMINES THAT THE PROBABLE CAUSE OF THIS ACCIDENT WAS THE OVERTURNING OF THE OUTSIDE RAIL IN A 30 8' CURVE BY HIGH LATERAL FORCES INDUCED BY THE SIX-WHEEL TRUCK OF THE SDP-40-F LOCOMOTIVE; THESE FORCES EXCEEDED THE CAPABILITY OF THE TRACK WHICH MET CURRENT FRA STANDARDS. THE SPEED OF THE LOCOMOTIVE, ALTHOUGH NOT GREATER THAN THE SPEED ALLOWABLE FOR CLASS 4 TRACK, WAS TOO GREAT TO BE SUSTAINED BY THE TRACK.
R-0090	SINCE JUNE 8, 1976, AMTRAK TRAIN, JAMES WHITCOMB RILEY, NO. 50 (EASTBOUND) AND 51 (WESTBOUND) HAS DERAILED THREE TIMES ON THE RAILSOF THE CHESAPEAKE AND OHIO COMPANY'S NEW RIVER SUBDIVISION. ON JUNE 8, THE TWO LOCOMOTIVE UNITS AND EIGHT CARS OF TRAIN 50 DERAILED AT HINTON, WEST VIRGINIA; TWO PERSONS WERE INJURED. ON SEPTEMBER 29, THE TWO LOCOMOTIVE UNITS AND SIX CARS OF TRAIN 50 DERAILED AT EAST SEWELL, WEST VIRGINIA; FOUR PERSONS WERE INJURED. ON NOVEMBER 29, FIVE CARS OF TRAIN 51 DERAILED AT SEWELL, WEST VIRGINIA. IN ADDITION, THREE FREIGHT TRAINS HAVE DERAILED RECENTLY ON THE NEW RIVER SUBDIVISION, AND IN ONE ACCIDENT SOME OF THE DERAILED CARS TOPPLED INTO NEW RIVER.
R-0091	ABOUT 4:15 A.M., ON JANUARY 16, 1977, 1 LOCOMOTIVE UNIT AND 12 OF AMTRAK TRAIN NO. 315 DERAILED ON THE LOUISVILLE AND NASHVILLE RAILROAD COMPANY'S TRACK NEAR NEW CASTLE, ALABAMA. SEVENTY-SIX OF THE 129 PERSONS ON BOARD THE TRAIN WERE INJURED. PROPERTY AND EQUIPMENT DAMAGE WAS ESTIMATED TO BE $578,000.
R-0093	ABOUT 3:40 P.M., ON AUGUST 2, 1976, 39 CARS OF UNION PACIFIC RAILROAD FREIGHT TRAIN EXTRA 2800 EAST DERAILED NEAR HASTINGS, NEBRASKA. DAMAGE WAS ESTIMATED TO BE ABOUT $1,155,010. NO ONE WAS INJURED.
R-0094	ABOUT 8:17 A.M., ON JUNE 30, 1976, 2 LOCOMOTIVE UNITS AND 11 C OF AMTRAK TRAIN NO. 59 DERAILED ON THE ILLINOIS CENTRAL GULF RAILROAD COMPANY'S TRACK NEAR GOODMAN, MISSISSIPPI. THIRTY-FOUR OF THE 145 PASSENGERS ON THE TRAIN WERE INJURED, 11 CREWMEMBERS WERE INJURED, 6 TRACKMEN WERE

LOG NUMBERS	ABSTRACTS
	INJURED, AND 1 TRACKMAN WAS KILLED. PROPERTY DAMAGE AMOUNTED TO ABOUT $453,100.
R-0095	ABOUT 4:25 A.M. ON MAY 16, 1976, THE LOCOMOTIVE AND 27 CARS OF CHICAGO AND NORTH WESTERN FREIGHT TRAIN NO. 242 DERAILED AS THEY MOVED EASTWARD ON A 1 DEGREE 54' TO 2DEGREE 15' COMPOUND CURVE JUST WEST OF GLEN ELLYN, ILLINOIS. ANOTHER CNW FREIGHT TRAIN, NO. 380, WAS MOVING EASTWARD ON AN ADJACENT TRACK AT THE TIME AND STRUCK THE DERAILED CARS OF NO. 242; THE LOCOMOTIVE AND NINE CARS OF TRAIN NO. 380 DERAILED. THE TANKHEAD OF TRAIN NO. 380'S FIFTH CAR WAS PUNCTURED DURING THE DERAILMENT BY THE COUPLER OF AN ADJACENT CAR; THIS RELEASED ANHYDROUS AMMONIA INTO THE ATMOSPHERE. FOURTEEN PERSONS WERE INJURED AS A RESULT OF THE DERAILMENT AND RELEASE OF THE AMMONIA. DAMAGE FROM THE ACCIDENT WAS ESTIMATED TO BE $1,914,600
R-0096	ABOUT 4:25 A.M., ON MAY 16, 1976, THE LOCOMOTIVE AND 27 CARS D CHICAGO AND NORTH WESTERN TRANSPORTATION COMPANY'S (CNW) FREIGHT TRAIN NO. 242 DERAILED AS THEY MOVED AROUND A 1 DEGREE 54' TO 2 DEGREE 15' COMPOUND CURVE NEAR GLEN ELLYN, ILLINOIS. ANOTHER CNW FREIGHT TRAIN, NO. 380,WHICH WAS MOVING ON AN ADJACENT TRACK, COLLIDED WITH THE DERAILED CARS OF NO. 242; THE LOCOMOTIVE AND NINE CARS OF NO. 380 DERAILED. THE TANKHEAD OF NO. 380'S FIFTH CAR WAS PUNCTURED BY THE COUPLER OF ANOTHER CAR DURING THE DERAILMENT. THE TANK CAR'S ANHYDROUS AMMONIA CARGO ESCAPED. FIFTEEN PERSONS WERE INJURED AS A RESULT OF THE DERAILMENT AND RELEASE OF AMMONIA. DAMAGE FROM THE ACCIDENT AMOUNTEDTO $1,914,000.
R-0112	ABOUT 2:55 P.M. ON NOVEMBER 26, 1976, 24 CARS OF BURLINGTON NO FREIGHT TRAIN EXTRA 5743 EAST DERAILED AT BELT, MONTANA. TWENTY-TWO PERSONS WERE INJURED AS A RESULT OF THE ACCIDENT AND TWO PERSONS AREMISSING. ABOUT 200 PEOPLE WERE EVACUATED BECAUSE OF SUBSEQUENT FIRESAND EXPLOSIONS. FIVE HOUSES, A FARMERS UNION COOPERATIVE FACILITY, AND SEVERAL OTHER BUILDINGS WERE DESTROYED OR DAMAGED. NINETEEN MOTOR VEHICLES WERE DESTROYED AND BELT CREEK WAS CONTAMINATED. DAMAGE WAS ESTIMATED TO BE $4,540,000.
R-0112A	ABOUT 2:55 P.M. ON NOVEMBER 26, 1976, 24 CARS OF BURLINGTON NO FREIGHT TRAIN EXTRA 5743 EAST DERAILED AT BELT, MONTANA. TWENTY-TWO PERSONS WERE INJURED AS A RESULT OF THE ACCIDENT AND TWO PERSONS AREMISSING. ABOUT 200 PEOPLE WERE EVACUATED BECAUSE OF SUBSEQUENT FIRESAND EXPLOSIONS. FIVE HOUSES, A FARMERS UNION COOPERATIVE FACILITY, AND SEVERAL OTHER

LOG NUMBERS	ABSTRACTS
	BUILDINGS WERE DESTROYED OR DAMAGED. NINETEEN MOTOR VEHICLES WERE DESTROYED AND BELT CREEK WAS CONTAMINATED. DAMAGE WAS ESTIMATED TO BE $4,540,000.
R-0113	ABOUT 2:45 A.M., ON DECEMBER 16, 1976, 1 SDF-40F LOCOMOTIVE UN 11 CARS OF AMTRAK TRAIN NO. 6 DERAILED WHEN LEAVING A 2 DEGREE 30' CURVE ON THE BURLINGTON NORTHERN TRACK NEAR RALSTON, NEBRASKA. FORTY-EIGHT OF THE 178 PASSENGERS, AND 15 OF THE 19 CREWMEMBERS ON THE TRAIN WERE INJURED. PROPERTY DAMAGE WAS ESTIMATED TO BE $816,000.
R-0201	ABOUT 6:06 P.M. ON NOVEMBER 9, 1977, 2 SD-45 LOCOMOTIVE UNITS AND 35 CARS OF LOUISVILLE AND NASHVILLE FREIGHT TRAIN NO. 407 DERAILED WHEN ENTERING A 6 DEGREES 04' CURVE AT PENSACOLA, FLORIDA. THE ADJACENT TANK HEADS OF THE 18TH AND 19TH CARS WERE PUNCTURED DURING THE DERAILMENT BY A LOOSE WHEEL AND AXLE ASSEMBLY; THIS RELEASED ANHYDROUS AMMONIA INTO THE ATMOSPHERE. TWO PERSONS DIED AND 46 WERE INJURED AS A RESULT OF THE DERAILMENT, RELEASE OF ANHYDROUS AMMONIA, AND EVACUATION OF ABOUT 1,000 PERSONS. PROPERTY DAMAGE WAS ESTIMATED TO BE $724,000.
R-0207A	ON APRIL 6, 1978, THE NATIONAL TRANSPORTATION SAFETY BOARD CON A 3-DAY EN BANC HEARING ON RAILROAD DERAILMENTS AND THE CARRIAGE OF HAZARDOUS MATERIALS. THE HEARING WAS PROMPTED BY THE INCREASING NUMBER OF DERAILMENTS NATIONUIDE, ESPECIALLY THOSE INVOLVING THE RELEASE OF HAZARDOUS MATERIALS FROM DOT 112A/114A 'JUMBO' TANK CARS. FORTY-NINE WITNESSES FROM THE RAILROAD INDUSTRY, TANK CAR BUILDERS AND OPERATORS, SHIPPERS, STATE AND LOCAL OFFICIALS, FIREFIGHTERS, LABOR REPRESENTATIVES, AND THE PUBLIC TESTIFIED AT THE HEARING.
R-0252	IN JUNE 1978, THE CONFEREES OF THE HOUSE AND SENATE APPROPRIATION COMMITTEES DIRECTED THE NATIONAL TRANSPORTATION SAFETY BOARD TO CONDUCT A THOROUGH REVIEW OF HAZARDOUS MATERIALS RAIL SHIPMENTS AND THE APPLICABLE TRACK STANDARDS AS WELL AS DETERMINE HOW THE FEDERAL RAILROAD ADMINISTRATION CAN MORE EFFECTIVELY PREVENT THE OCCURRENCE AND REDUCE THE SEVERITY OF DERAILMENTS OF HAZARDOUS MATERIALS.
R-0313	THE WESTERN PACIFIC RAILROAD HAS REPORTED TO THE FEDERAL RAILROAD ADMINISTRATION 29 ACCIDENTS WHICH OCCURRED IN THE SACRAMENTO AREA FROM NOVEMBER 1, 1978,

LOG NUMBERS	ABSTRACTS
	TO NOVEMBER 1, 1979. ALTHOUGH NONE OF THESE ACCIDENTS MET THE ESTABLISHED CRITERIA FOR INVESTIGATION BY THE NTSB, THE SAFETY BOARD UNDERTOOK A REVIEW OF THE ACCIDENT REPORTS AND AN ON-SITE INSPECTION TO DETERMINE WHETHER THESE ACCIDENTS COLLECTIVELY INDICATE A SITUATION POSING A POTENTIAL THREAT TO PUBLIC SAFETY.
R-0322A	ON MARCH 14, 1980, WESTBOUND AMTRAK TRAIN NO. 7, THE EMPIRE BUILDER, DERAILED TWO LOCOMOTIVE UNITS AND EIGHT CARS WHILE MOVING AT 37 MPH THROUGH A 6 DEGREE 8 MINUTE CURVE ON THE BURLINGTON NORTHERN (BN) TRACK AT GLACIER PARK, MONTANA. OF THE 170 PASSENGERS AND 20 CREWMEMBERS, 115 PERSONS WERE INJURED AND 35 WERE HOSPITALIZED. PROPERTY DAMAGE WAS ESTIMATED AT $546,800.
R-0322B	ON MARCH 14, 1980, WESTBOUND AMTRAK TRAIN NO. 7, THE EMPIRE BUILDER, DERAILED TWO LOCOMOTIVE UNITS AND EIGHT CARS WHILE MOVING AT 37 MPH THROUGH A 6 DEGREE 8 MINUTE CURVE ON THE BURLINGTON NORTHERN (BN) TRACK AT GLACIER PARK, MONTANA. OF THE 170 PASSENGERS AND 20 CREWMEMBERS, 115 PERSONS WERE INJURED AND 35 WERE HOSPITALIZED. PROPERTY DAMAGE WAS ESTIMATED AT $546,800.
R-0346	ON JULY 26, 1980, 4 LOCOMOTIVE UNITS AND 17 CARS, INCLUDING 7 PLACARDED TANK CARS CONTAINING HAZARDOUS MATERIALS, OF ILLINOIS CENTRAL GULF RAILROAD COMPANY FREIGHT TRAIN NO. 64 WERE DERAILED WHILE MOVING AT A CALCULATED SPEED OF ABOUT 35 MPH AROUND A 6 DEGREE CURVE IN MULDRAUGH, KENTUCKY. TWO TANK CARS OF VINYL CHLORIDE WERE PUNCTURED AND THEIR CONTENTS BURNED. FLAMES IMPINGED TWO OTHER TANK CARS OF VINYL CHLORIDE, CAUSING ONE TO VENT TOXIC FUMES, BUT NEITHER CAR RUPTURED. ABOUT 6,500 PERSONS WERE EVACUATED FROM MULDRAUGH AND THE U.S. ARMY INSTALLATION AT FORT KNOX. FOUR TRAIN CREWMEMBERS WERE INJURED DURING THE DERAILMENT AND PROPERTY DAMAGE WAS ESTIMATED AT $1,348,394.
R-0346A	ON JULY 26, 1980, 4 LOCOMOTIVE UNITS AND 17 CARS, INCLUDING 7 PLACARDED TANK CARS CONTAINING HAZARDOUS MATERIALS, OF ILLINOIS CENTRAL GULF RAILROAD COMPANY FREIGHT TRAIN NO. 64 WERE DERAILED WHILE MOVING AT A CALCULATED SPEED OF ABOUT 35 MPH AROUND A 6 DEGREE CURVE IN MULDRAUGH, KENTUCKY. TWO TANK CARS OF VINYL

LOG NUMBERS	ABSTRACTS
	CHLORIDE WERE PUNCTURED AND THEIR CONTENTS BURNED. FLAMES IMPINGED TWO OTHER TANK CARS OF VINYL CHLORIDE, CAUSING ONE TO VENT TOXIC FUMES, BUT NEITHER CAR RUPTURED. ABOUT 6,500 PERSONS WERE EVACUATED FROM MULDRAUGH AND THE U.S. ARMY INSTALLATION AT FORT KNOX. FOUR TRAIN CREWMEMBERS WERE INJURED DURING THE DERAILMENT, AND PROPERTY DAMAGE WAS ESTIMATED AT $1,348,394.

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                           TRACK SAFETY RECOMMENDATIONS
                                      RECOMMENDATION SUBJECTS AND KEYWORDS
                                              -- AS OF  3/08/82 --


                                                RECOMMENDATION SUBJECT                        KEYWORDS.
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RECOMMENDATION NUMBER:  R-73-005        THE FEDERAL RAILROAD ADMINISTRAION, MODIFY FEDERAL TRACK      TRACK
ISSUE DATE:  2/28/73                    SAFETY STANDARDS TO INSURE THAT YARD TRACKS ADJACENT TO
ADDRESSEE:  FRA                         MAIN TRACKS ARE MAINTAINED AND INSPECTED IN SUCH A WAY AS
STATUS:                                 TOELIMINATE THE PROBABILITY OF TRACK-RELATED DERAILMENTS.
  OPEN - UNACCEPTABLE ACTION            INTHIS CONNECTION, THE SAFETY BOARD REITERATES AND
                                        EMPHASIZESSAFETY RECOMMENDATION R-72-4 FROM ITS REPORT
                                        NTSB-RAR-72-1,PENN CENTRAL FREIGHT TRAIN DERAILMENT,
                                        PASSENGER TRAINCOLLISION WITH HAZARDOUS MATERIAL CAR, SOUND
                                        VIEW,CONNECTICUT, 10/8/70.

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RECOMMENDATION NUMBER:  R-74-002        DETERMINE THE REASONS THAT THE NUMBER OF TRAIN ACCIDENTS      TRACK
ISSUE DATE:  1/02/74                    ATTRI TO BROKEN RAILS HAS INCREASED AT A RATE FOUR TIMES
ADDRESSEE:  FRA                         THE RATE OF INCREASE IN RAIL FAILURES.
STATUS:
  OPEN - UNACCEPTABLE ACTION

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RECOMMENDATION NUMBER:  R-74-003        PROMULGATE TRACK SAFETY STANDARDS THAT DESCRIBE THE VARIOUS   TRACK
ISSUE DATE:  1/02/74                    COMBINATIONS OF RAIL SECTIONS AND RAIL WEAR LIMITS WHICH
ADDRESSEE:  FRA                         ARE COMPATIBLE WITH CURRENT STANDARDS FOR TRACK GEOMETRY
STATUS:                                 AND TRACK STRUCTURE.

  OPEN - UNACCEPTABLE ACTION

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RECOMMENDATION NUMBER:  R-74-004        STUDY THE FACTORS THAT AFFECT RAIL FAILURES AND DEVELOP       TRACK
ISSUE DATE:  1/02/74                    CRITERIA THAT WILL PROMOTE EFFECTIVE RAIL INSPECTION
ADDRESSEE:  FRA                         PROCEDURES AND REGULATIONS.
STATUS:
  OPEN - UNACCEPTABLE ACTION

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RECOMMENDATION NUMBER:  R-74-007        THE ASSOCIATION OF AMERICAN RAILROADS REQUEST ITS MEMBERS     TRACK
ISSUE DATE:  1/02/74                    TO REVIEW THEIR TRACK MAINTENANCE POLICIES, ESPECIALLY
ADDRESSEE:  ASSOCIATION OF AMERICAN R   THOSE POLICIES CONCERNING RAIL INSPECTION, AND TO INSTITUTE
STATUS:                                 IMMEDIATE CORRECTIVE ACTION TO REDUCE THE NUMBER OF TRAIN
  CLOSED - UNACCEPTABLE ACTION          ACCIDENTS THAT RESULT FROM BROKEN RAILS.

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	RECOMMENDATION SUBJECT	KEYWORDS
RECOMMENDATION NUMBER: R-74-026 ISSUE DATE: 7/29/74 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	DETERMINE AND ASSESS THE CURRENT RISKS OF TRAIN ACCIDENTS INVO MISALIGNED SWITCHES, COLLISION, BROKEN RAILS, AND OTHER ROUTE OBSTRUCTIONS ON MAIN TRACKS WHERE AUTOMATIC BLOCK SIGNAL SYSTEMS DO NOT EXIST. THE FRA SHOULD THEN PROMULGATE REGULATIONS TO REPLACE INTERSTATE COMMERCE COMMISSION ORDER NO. 29543. THESE REGULATIONS SHOULD DETAIL THE MAJOR RISKS AND CONTROLS ASSUMED, SHOULD SET GUIDELINES FOR SAFE OPERATIONS BELOW THE MAXIMUM OPERATING SPEED, AND ASSIGN RESPONSIBILITY TO THE CARRIER FOR SAFE OPERATIONS.	TRACK
RECOMMENDATION NUMBER: R-75-002 ISSUE DATE: 2/05/75 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	PROMULGATE REGULATIONS TO ESTABLISH MINIMUM STANDARDS FOR THE AND QUALITY OF ALL COMPONENTS USED IN THE CONSTRUCTION OF TRACK.	TRACK
RECOMMENDATION NUMBER: R-76-020 ISSUE DATE: 7/05/76 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	REVIEW THE FEDERAL TRACK SAFETY STANDARDS TO DETERMINE IF THEI CURRENT REQUIREMENTS ARE ADEQUATE FOR THE SAFE ACCOMODATION OF THE SIX-WHEEL TRUCK LOCOMOTIVES.	TRACK
RECOMMENDATION NUMBER: R-77-004 ISSUE DATE: 4/22/77 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	REQUIRE THAT TRAINS OPERATED OVER UNSTABLE TRACK BE LIMITED BY A SLOW ORDER, VERBAL CONTACT BY RADIO, OR BY FLAG PROTECTION TO SPEEDS THAT WILL REDUCE THE POSSIBILITY OF TRACK BUCKLING FROM FORCES THAT EXCEED THE RESTRAINING ABILITY OF THE TRACK.	TRACK
RECOMMENDATION NUMBER: R-77-006 ISSUE DATE: 4/21/77 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	AMEND TRACK GEOMETRY STANDARD 49 CFR 213.55, ALIGNMENT, SO THA DEFINES "UNIFORMITY," ESTABLISHES A MAXIMUM RATE-OF-CHANGE IN ALIGNMENT DEVIATION, AND ESTABLISHES THE MAXIMUM NUMBER OF FEET BETWEEN WHICH EACH ALIGNMENT MID-OFFSET MEASUREMENT SHALL BE TAKEN.	TRACK

	RECOMMENDATION SUBJECT	KEYWORDS
RECOMMENDATION NUMBER: R-77-007 ISSUE DATE: 4/21/77 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	AMEND TRACK GEOMETRY STANDARD 49 CFR 213.63, TRACK SURFACE, SO IT DEFINES 'UNIFORM PROFILE,' ESTABLISHES MAXIMUM RATE-OF-CHANGE IN PROFILE AND CROSS LEVEL DEVIATIONS, AND ESTABLISHES THE MAXIMUM NUMBER OF FEET BETWEEN WHICH EACH PROFILE MIDORDINATE MEASUREMENT AND EACH CROSS LEVEL MEASUREMENT SHALL BE TAKEN.	TRACK
RECOMMENDATION NUMBER: R-77-008 ISSUE DATE: 4/21/77 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	INCLUDE IN REVIEW OF CURRENT FRA TRACK SAFETY REGULATIONS, INVESTIGATION AND TESTING TO DETERMINE IF THE MINIMUM TRACK CONDITIONS THAT ARE REQUIRED FOR THE FRA CLASSES OF TRACK BY 49 CFR 213.9 ARE ADEQUATE FOR ALL TYPES OF TRAINS AND FOR THE MAXIMUM ALLOWABLE SPEED FOR EACH CLASS.	TRACK
RECOMMENDATION NUMBER: R-77-029 ISSUE DATE: 10/13/77 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	REVISE 49 CFR 213.237, INSPECTION OF RAIL, TO INSURE THE DISCO OF INTERNAL DEFECTS IN ALL TRACK, CLASSES 3 TO 6, INCLUSIVE, BEFORE THOSE DEVECTS DEVELOP INTO FAILURES.	TRACK
RECOMMENDATION NUMBER: R-77-031 ISSUE DATE: 10/13/77 ADDRESSEE: BURLINGTON NORTHERN RAILR STATUS: OPEN - UNACCEPTABLE ACTION	RELEGATE RAIL SECTION OF 100 POUNDS OR LESS, MADE OF NONCONTRO COOLED STEEL, TO LOCATIONS WHERE SERVICE FAILURES WILL NOT RESULT IN CATASTROPHIC DERAILMENTS.	TRACK
RECOMMENDATION NUMBER: R-77-032 ISSUE DATE: 10/20/77 ADDRESSEE: FRA STATUS: CLOSED - UNACCEPTABLE ACTION	DEVELOP METHODS AND CRITERIA FOR TRACK INSPECTORS TO DETERMINE TIMBER CROSSTIES ARE IMPAIRED BY INSERVICE DYNAMIC FORCES TO THE EXTENT THAT THEY DO NOT ADEQUATELY HOLD TRACK SPIKES.	TRACK

	RECOMMENDATION SUBJECT	KEYWORDS
RECOMMENDATION NUMBER: R-77-033 ISSUE DATE: 10/20/77 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	AMEND TRACK GEOMETRY STANDARD 49CFR 213.53 GAGE, SO THAT IT ESTABLISHES A MAXIMUM RATE-OF-CHANGE IN TRACK GAGE.	TRACK
RECOMMENDATION NUMBER: R-77-034 ISSUE DATE: 10/20/77 ADDRESSEE: FRA STATUS: CLOSED - UNACCEPTABLE ACTION	AMEND TRACK STRUCTURE STANDARD 49 CFR 213.109 (B-2) CROSSTIES, THAT IT IS POSSIBLE TO OBTAIN A STANDARD AND EFFECTIVE INSERVICE EVALUATION OF THE SUBJECT ASSESSMENT OF "A TIMBER CROSSTIE IS CONSIDERED TO BE DEFECTIVE WHEN IT IS... IMPAIRED TO THE EXTENT IT WILL NOT HOLD SPIKES."	TRACK
RECOMMENDATION NUMBER: R-77-035 ISSUE DATE: 10/20/77 ADDRESSEE: FRA STATUS: CLOSED - UNACCEPTABLE ACTION	INVESTIGATE AND TEST TO DETERMINE IF TIMBER CROSSTIE TRACK SPI REQUIREMENTS AS CONTAINED IN TRACK STRUCTURE STANDARD 49 CFR 213.127ARE ADEQUATE FOR THE TONNAGE AND SPEED OF PRESENT LOCOMOTIVES AND TRAINS.	TRACK
RECOMMENDATION NUMBER: R-78-043 ISSUE DATE: 7/31/78 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: INCLUDE IN ITS REVIEW OF THE CURRENT FRA TRACK SAFETY STANDARDS, INVESTIGATION AND TESTING TO DETERMINE IF THE 4-FOOT 8-INCH MINIMUM GAGE ALLOWED IN CURVED TRACK ACCORDING TO 49 CFR 213.53 IS APPROPRIATE FOR 6-AXLE LOCOMOTIVE UNITS AND CARS.	TRACK
RECOMMENDATION NUMBER: R-79-017 ISSUE DATE: 3/20/79 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	DEVELOP AND DOCUMENT A TRACK SAFETY PROGRAM BASED ON RISK AS INDICATED BY A COMPREHENSIVE SAFETY ANALYSIS WHICH WILL INCLUDE: DESIRED LEVEL OF SAFETY (RISK) TO BE ACHIEVED; PROGRAM GOALS AND OBJECTIVES BASED ON THAT LEVEL; AND CRITERIA BY WHICH THE SUCCESS OF THE PROGRAM WILL BE MEASURED.	TRACK

	RECOMMENDATION SUBJECT	KEYWORDS
RECOMMENDATION NUMBER: R-79-019 ISSUE DATE: 3/20/79 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	IMMEDIATELY REVISE THE TRACK SAFETY STANDARDS TO ELIMINATE THE SUBJECTIVITY, INCOMPATIBILITY, VAGUENESS, AND UNENFORCEABILITY. THE REQUIREMENTS SHOULD BE MADE MORE EXPLICIT SO AS TO INSURE THE DETECTION AND CORRECTION OF ALL COMBINATIONS OF TRACK CONDITIONS WHICH CAUSE DERAILMENTS.	TRACK
RECOMMENDATION NUMBER: R-79-025 ISSUE DATE: 3/20/79 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	DETERMINE THE ULTIMATE SAFETY EFFECT OF ALLOWING THE INDISCRIMINATE LOWERING OF MAIN TRACK CLASSIFICATIONS INSTEAD OF MAINTAINING THE TRACK AT ORIGINAL INTENDED CLASS.	TRACK
RECOMMENDATION NUMBER: R-80-027 ISSUE DATE: 8/01/80 ADDRESSEE: WESTERN PACIFIC RAILROAD TATUS: OPEN - RESPONSE RECEIVED	THE NTSB RECOMMENDS THAT THE WESTERN PACIFIC RAILROAD COMPANY: INSTALL PHYSICAL APPLIANCES, SUCH AS CAR RETARDERS, TRACK SKATES, OR DERAILS, TO PREVENT CARS FROM ROLLING OUT OF THE LOWER ENDS OF THE TRACKS AT SOUTH SACRAMENTO YARD.	TRACK
RECOMMENDATION NUMBER: R-80-032 ISSUE DATE: 8/15/80 ADDRESSEE: FRA STATUS: OPEN - UNACCEPTABLE ACTION	THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: AMEND TRACK SAFETY STANDARD 49 CFR 213.241, INSPECTION RECORDS, TO REQUIRE RAILROAD INSPECTORS TO LIST ON THEIR INSPECTION RECORDS THE LOCATION OF RAILS WHICH EXHIBIT THE EXTERNAL CONDITIONS LISTED IN SUBPART (B) OF 49 CFR 213.113, DEFECTIVE RAILS, AND THE REMEDIAL ACTION THEY HAVE TAKEN.	TRACK
RECOMMENDATION NUMBER: R-80-033 ISSUE DATE: 8/15/80 ADDRESSEE: BURLINGTON NORTHERN RAILR STATUS: OPEN - AWAIT REPLY	THE NTSB RECOMMENDS THAT THE BURLINGTON NORTHERN: INSURE THAT TRACK SUPERVISORS AND INSPECTORS TAKE PROPER ACTION TO PROTECT AGAINST CONDITIONS AFFECTING SAFETY OF RAILWAY OPERATIONS PENDING CORRECTION OF DEFECTIVE TRACK CONDITIONS AS PRESCRIBED IN BURLINGTON NORTHERN MAINTENANCE OF WAY CIRCULARS AND FEDERAL REGULATIONS.	TRACK

	RECOMMENDATION SUBJECT	KEYWORDS
RECOMMENDATION NUMBER: R-81-032 ISSUE DATE: 2/11/81 ADDRESSEE: ILLINOIS CENTRAL GULF RAI STATUS: OPEN - RESPONSE RECEIVED	THE NTSB RECOMMENDS THAT THE ILLINOIS CENTRAL GULF RAILROAD COMPANY: ESTABLISH AND IMPLEMENT PROCEDURES TO MAINTAIN MAINLINE TRACKS AND SIDINGS TO A LEVEL OF SAFETY NOT LESS THAN THAT WHICH IS PRESCRIBED BY FEDERAL REGULATIONS GOVERNING CARRIER-DESIGNATED TRACK CLASSES.	TRACK
RECOMMENDATION NUMBER: R-81-033 ISSUE DATE: 2/11/81 ADDRESSEE: ILLINOIS CENTRAL GULF RAI STATUS: OPEN - RESPONSE RECEIVED	THE NTSB RECOMMENDS THAT THE ILLINOIS CENTRAL GULF RAILROAD COMPANY: ESTABLISH AND IMPLEMENT TRACK MAINTENANCE STANDARDS WHICH DESIGNATE THE LIMIT OF ACCEPTABLE RAIL WEAR AND WHICH REQUIRE RAIL REMOVAL WHEN WORN BEYOND THE ACCEPTABLE LIMITS.	TRACK
RECOMMENDATION NUMBER: R-81-034 ISSUE DATE: 2/11/81 ADDRESSEE: FRA STATUS: OPEN - RESPONSE RECEIVED	THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: INSTITUTE SURVEILLANCE OF THE MAINTENANCE OF LOUISVILLE DISTRICT TRACKAGE OF THE ILLINOIS CENTRAL GULF RAILROAD COMPANY UNTIL IT IS BROUGHT INTO CONFORMANCE WITH THE REQUIREMENTS OF THE FRA TRACK SAFETY STANDARDS.	TRACK
RECOMMENDATION NUMBER: R-81-035 ISSUE DATE: 2/11/81 ADDRESSEE: FRA STATUS: OPEN - RESPONSE RECEIVED	THE NTSB RECOMMENDS THAT THE FEDERAL RAILROAD ADMINISTRATION: PROMULGATE REGULATIONS WHICH DESIGNATE THE LIMIT OF ACCEPTABLE RAIL WEAR AND WHICH REQUIRE RAILROADS TO REMOVE FROM ACTIVE TRACKS RAILS THAT ARE WORN BEYOND THE ACCEPTABLE LIMITS.	TRACK

LOG NUMBERS	ABSTRACTS
	INJURED, AND 1 TRACKMAN WAS KILLED. PROPERTY DAMAGE AMOUNTED TO ABOUT $453,100.
R-0095	ABOUT 4:25 A.M. ON MAY 16, 1976, THE LOCOMOTIVE AND 27 CARS OF CHICAGO AND NORTH WESTERN FREIGHT TRAIN NO. 242 DERAILED AS THEY MOVED EASTWARD ON A 1 DEGREE 54' TO 2DEGREE 15' COMPOUND CURVE JUST WEST OF GLEN ELLYN, ILLINOIS. ANOTHER CNW FREIGHT TRAIN, NO. 380, WAS MOVING EASTWARD ON AN ADJACENT TRACK AT THE TIME AND STRUCK THE DERAILED CARS OF NO. 242; THE LOCOMOTIVE AND NINE CARS OF TRAIN NO. 380 DERAILED. THE TANKHEAD OF TRAIN NO. 380'S FIFTH CAR WAS PUNCTURED DURING THE DERAILMENT BY THE COUPLER OF AN ADJACENT CAR; THIS RELEASED ANHYDROUS AMMONIA INTO THE ATMOSPHERE. FOURTEEN PERSONS WERE INJURED AS A RESULT OF THE DERAILMENT AND RELEASE OF THE AMMONIA. DAMAGE FROM THE ACCIDENT WAS ESTIMATED TO BE $1,914,600
R-0096	ABOUT 4:25 A.M., ON MAY 16, 1976, THE LOCOMOTIVE AND 27 CARS O CHICAGO AND NORTH WESTERN TRANSPORTATION COMPANY'S (CNW) FREIGHT TRAIN NO. 242 DERAILED AS THEY MOVED AROUND A 1 DEGREE 54' TO 2 DEGREE 15' COMPOUND CURVE NEAR GLEN ELLYN, ILLINOIS. ANOTHER CNW FREIGHT TRAIN, NO. 380,WHICH WAS MOVING ON AN ADJACENT TRACK, COLLIDED WITH THE DERAILED CARS OF NO. 242; THE LOCOMOTIVE AND NINE CARS OF NO. 380 DERAILED. THE TANKHEAD OF NO. 380'S FIFTH CAR WAS PUNCTURED BY THE COUPLER OF ANOTHER CAR DURING THE DERAILMENT. THE TANK CAR'S ANHYDROUS AMMONIA CARGO ESCAPED. FIFTEEN PERSONS WERE INJURED AS A RESULT OF THE DERAILMENT AND RELEASE OF AMMONIA. DAMAGE FROM THE ACCIDENT AMOUNTEDTO $1,914,000.
R-0112	ABOUT 2:55 P.M. ON NOVEMBER 26, 1976, 24 CARS OF BURLINGTON NO FREIGHT TRAIN EXTRA 5743 EAST DERAILED AT BELT, MONTANA. TWENTY-TWO PERSONS WERE INJURED AS A RESULT OF THE ACCIDENT AND TWO PERSONS AREMISSING. ABOUT 200 PEOPLE WERE EVACUATED BECAUSE OF SUBSEQUENT FIRESAND EXPLOSIONS. FIVE HOUSES, A FARMERS UNION COOPERATIVE FACILITY, AND SEVERAL OTHER BUILDINGS WERE DESTROYED OR DAMAGED. NINETEEN MOTOR VEHICLES WERE DESTROYED AND BELT CREEK WAS CONTAMINATED. DAMAGE WAS ESTIMATED TO BE $4,540,000.
R-0112A	ABOUT 2:55 P.M. ON NOVEMBER 26, 1976, 24 CARS OF BURLINGTON NO FREIGHT TRAIN EXTRA 5743 EAST DERAILED AT BELT, MONTANA. TWENTY-TWO PERSONS WERE INJURED AS A RESULT OF THE ACCIDENT AND TWO PERSONS AREMISSING. ABOUT 200 PEOPLE WERE EVACUATED BECAUSE OF SUBSEQUENT FIRESAND EXPLOSIONS. FIVE HOUSES, A FARMERS UNION COOPERATIVE FACILITY, AND SEVERAL OTHER

LOG NUMBERS	ABSTRACTS
	BUILDINGS WERE DESTROYED OR DAMAGED. NINETEEN MOTOR VEHICLES WERE DESTROYED AND BELT CREEK WAS CONTAMINATED. DAMAGE WAS ESTIMATED TO BE $4,540,000.
R-0113	ABOUT 2:45 A.M., ON DECEMBER 16, 1976, 1 SDF-40F LOCOMOTIVE UN 11 CARS OF AMTRAK TRAIN NO. 6 DERAILED WHEN LEAVING A 2 DEGREE 30' CURVE ON THE BURLINGTON NORTHERN TRACK NEAR RALSTON, NEBRASKA. FORTY-EIGHT OF THE 178 PASSENGERS, AND 15 OF THE 19 CREWMEMBERS ON THE TRAIN WERE INJURED. PROPERTY DAMAGE WAS ESTIMATED TO BE $816,000.
R-0201	ABOUT 6:06 P.M. ON NOVEMBER 9, 1977, 2 SD-45 LOCOMOTIVE UNITS AND 35 CARS OF LOUISVILLE AND NASHVILLE FREIGHT TRAIN NO. 407 DERAILED WHEN ENTERING A 6 DEGREES 04' CURVE AT PENSACOLA, FLORIDA. THE ADJACENT TANK HEADS OF THE 18TH AND 19TH CARS WERE PUNCTURED DURING THE DERAILMENT BY A LOOSE WHEEL AND AXLE ASSEMBLY; THIS RELEASED ANHYDROUS AMMONIA INTO THE ATMOSPHERE. TWO PERSONS DIED AND 46 WERE INJURED AS A RESULT OF THE DERAILMENT, RELEASE OF ANHYDROUS AMMONIA, AND EVACUATION OF ABOUT 1,000 PERSONS. PROPERTY DAMAGE WAS ESTIMATED TO BE $724,000.
R-0207A	ON APRIL 6, 1978, THE NATIONAL TRANSPORTATION SAFETY BOARD CON A 3-DAY EN BANC HEARING ON RAILROAD DERAILMENTS AND THE CARRIAGE OF HAZARDOUS MATERIALS. THE HEARING WAS PROMPTED BY THE INCREASING NUMBER OF DERAILMENTS NATIONWIDE, ESPECIALLY THOSE INVOLVING THE RELEASE OF HAZARDOUS MATERIALS FROM DOT 112A/114A 'JUMBO' TANK CARS. FORTY-NINE WITNESSES FROM THE RAILROAD INDUSTRY, TANK CAR BUILDERS AND OPERATORS, SHIPPERS, STATE AND LOCAL OFFICIALS, FIREFIGHTERS, LABOR REPRESENTATIVES, AND THE PUBLIC TESTIFIED AT THE HEARING.
R-0252	IN JUNE 1978, THE CONFEREES OF THE HOUSE AND SENATE APPROPRIATION COMMITTEES DIRECTED THE NATIONAL TRANSPORTATION SAFETY BOARD TO CONDUCT A THOROUGH REVIEW OF HAZARDOUS MATERIALS RAIL SHIPMENTS AND THE APPLICABLE TRACK STANDARDS AS WELL AS DETERMINE HOW THE FEDERAL RAILROAD ADMINISTRATION CAN MORE EFFECTIVELY PREVENT THE OCCURRENCE AND REDUCE THE SEVERITY OF DERAILMENTS OF HAZARDOUS MATERIALS.
R-0313	THE WESTERN PACIFIC RAILROAD HAS REPORTED TO THE FEDERAL RAILROAD ADMINISTRATION 29 ACCIDENTS WHICH OCCURRED IN THE SACRAMENTO AREA FROM NOVEMBER 1, 1978,

LOG NUMBERS	ABSTRACTS
	TO NOVEMBER 1, 1979. ALTHOUGH NONE OF THESE ACCIDENTS MET THE ESTABLISHED CRITERIA FOR INVESTIGATION BY THE NTSB, THE SAFETY BOARD UNDERTOOK A REVIEW OF THE ACCIDENT REPORTS AND AN ON-SITE INSPECTION TO DETERMINE WHETHER THESE ACCIDENTS COLLECTIVELY INDICATE A SITUATION POSING A POTENTIAL THREAT TO PUBLIC SAFETY.
R-0322A	ON MARCH 14, 1980, WESTBOUND AMTRAK TRAIN NO. 7, THE EMPIRE BUILDER, DERAILED TWO LOCOMOTIVE UNITS AND EIGHT CARS WHILE MOVING AT 37 MPH THROUGH A 6 DEGREE 8 MINUTE CURVE ON THE BURLINGTON NORTHERN (BN) TRACK AT GLACIER PARK, MONTANA. OF THE 170 PASSENGERS AND 20 CREWMEMBERS, 115 PERSONS WERE INJURED AND 35 WERE HOSPITALIZED. PROPERTY DAMAGE WAS ESTIMATED AT $546,800.
R-0322B	ON MARCH 14, 1980, WESTBOUND AMTRAK TRAIN NO. 7, THE EMPIRE BUILDER, DERAILED TWO LOCOMOTIVE UNITS AND EIGHT CARS WHILE MOVING AT 37 MPH THROUGH A 6 DEGREE 8 MINUTE CURVE ON THE BURLINGTON NORTHERN (BN) TRACK AT GLACIER PARK, MONTANA. OF THE 170 PASSENGERS AND 20 CREWMEMBERS, 115 PERSONS WERE INJURED AND 35 WERE HOSPITALIZED. PROPERTY DAMAGE WAS ESTIMATED AT $546,800.
R-0346	ON JULY 26, 1980, 4 LOCOMOTIVE UNITS AND 17 CARS, INCLUDING 7 PLACARDED TANK CARS CONTAINING HAZARDOUS MATERIALS, OF ILLINOIS CENTRAL GULF RAILROAD COMPANY FREIGHT TRAIN NO. 64 WERE DERAILED WHILE MOVING AT A CALCULATED SPEED OF ABOUT 35 MPH AROUND A 6 DEGREE CURVE IN MULDRAUGH, KENTUCKY. TWO TANK CARS OF VINYL CHLORIDE WERE PUNCTURED AND THEIR CONTENTS BURNED. FLAMES IMPINGED TWO OTHER TANK CARS OF VINYL CHLORIDE, CAUSING ONE TO VENT TOXIC FUMES, BUT NEITHER CAR RUPTURED. ABOUT 6,500 PERSONS WERE EVACUATED FROM MULDRAUGH AND THE U.S. ARMY INSTALLATION AT FORT KNOX. FOUR TRAIN CREWMEMBERS WERE INJURED DURING THE DERAILMENT AND PROPERTY DAMAGE WAS ESTIMATED AT $1,348,394.
R-0346A	ON JULY 26, 1980, 4 LOCOMOTIVE UNITS AND 17 CARS, INCLUDING 7 PLACARDED TANK CARS CONTAINING HAZARDOUS MATERIALS, OF ILLINOIS CENTRAL GULF RAILROAD COMPANY FREIGHT TRAIN NO. 64 WERE DERAILED WHILE MOVING AT A CALCULATED SPEED OF ABOUT 35 MPH AROUND A 6 DEGREE CURVE IN MULDRAUGH, KENTUCKY. TWO TANK CARS OF VINYL

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                         FLAMES IMPINGED TWO OTHER TANK CARS OF VINYL CHLORIDE,
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                         MULDRAUGH AND THE U.S. ARMY INSTALLATION AT FORT KNOX.
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                         $1,348,394.
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Mr. CARNEY. In conclusion, I would like to say, as the Chairman said before, we had your Chairman, Mr. Burnett, here earlier this week on aviation safety. Your agency responds to this committee quite frequently and in a manner that is outstanding and very, very professional. It is comforting to me at least to know that the National Transportation Safety Board is out there doing an enormous job for the American public and I hope they recognize that.

Thank you.

Ms. GOLDMAN. Thank you very much.

Mr. GLICKMAN. Thank you.

Mr. McCandless?

Mr. McCANDLESS. Thank you, Mr. Chairman.

Ms. Goldman, my area of California is directly involved in the transcontinental system, and the observation that I've had over the years essentially is that the same technology, with possibly some mechanization, is the same technology being used today that was used back in the forties when we had the steam engines rather than the diesel engines, but that the tracks are being utilized more and at higher speeds. So in drawing some kind of analogy, I go back to our previous hearing on air traffic and think to myself "have we reached a point where we're facing a similar situation on some railroads, some lines, that we face at air terminals, overutilization or maximum utilization which requires a higher level of maintenance because of that utilization which is not actually taking place".

Is this an assumption that has some validity or not?

Ms. GOLDMAN. Well, I think, in terms—I would like to say I would be pleased if the railroad industry were as up-to-date technologically as the aviation industry is. In terms of the utilization, I would think you would probably find the rail industry wishing that it had more business. I don't think, in fact, from various indices, the situation has changed—and I don't usually look at it from an economic analysis under my type of jurisdiction. But I don't see—what you have are different kinds of cargoes operating—and we have addressed ourselves, for example, to the increasing use of hazardous materials. You have a different mix, longer trains, rather than a series of shorter trains.

You're correct, that there is a change. I guess I'm trying to mentally change it to the air traffic control system that I think I would prefer to look at it. The only analyogy is that they are not up to speed in the rail industry with the technological advances that I think are potentially available. But there is a mix and a change in the type of traffic, that is true.

Mr. McCANDLESS. Then it's wrong to assume that certain lines reaching a saturation point as far as you see it?

Ms. GOLDMAN. I think the rail industry would say so.

Mr. McCANDLESS. So the railroad that said to Greater Los Angeles "we cannot put this commuter system on because we don't have the time available on the track" would be doing this for reasons other than—

Ms. GOLDMAN. I can't speak to Los Angeles. I would certainly be willing to look into it for you. I'm not familiar with the economics of the traffic out there.

Mr. McCANDLESS. We're talking here today about rail track safety monitoring technology. We talked about these geometry cars, or whatever the terminology is. What else do we have available to us in the way of "modern technology" quote/unquote that could be utilized that is not being utilized without placing some Star Wars undue capital requirement, unjustifiable capital requirement, on industry?

Ms. GOLDMAN. Are you talking about the tracks themselves?

Mr. McCANDLESS. Yes. We're talking here today about track safety monitoring technology.

Ms. GOLDMAN. OK. When I was talking about—well, first of all, in terms of some of the cars, geometry cars that you were talking about, I think there can be much greater use of that, those, than there has been. There are new types of rail being used. There are constant developments, I think, in the industry in terms of manufacturers, and I don't know that all of those have been explored fully.

Mr. McCANDLESS. Last year I was a guest of the Japanese Government and spent a little bit of time on their famous railroad—I had an interest in it—and noted that their technology in creating a railbed is entirely different than ours, primarily, of course, because of what they call their bullet train usage, one of the items being that all of the ties are cast concrete in which metal has been included to receive a screw-in bolt rather than a nail or a spike.

Realizing this is very costly, realizing it is done there because of the type of train, could we afford to do this technically—I mean, could we afford to do this in terms of our capital expenditure? Would this type of technology reduce the number of fatalities due to rail splitting, rail separating, and would it enhance the railroads to the degree that they would have less maintenance?

Ms. GOLDMAN. I'm afraid that I do not have sufficient technological knowledge in the area you're speaking of. If you are talking about the concrete ties, there has been some use of that in this country. I think that somewhat varies according to climate and other needs and it is still not widely used. I do not have enough information on that based on my experience, but I can certainly try and get it for you.

Mr. McCANDLESS. Thank you.

Thank you, Mr. Chairman.

Mr. GLICKMAN. Thank you for your testimony. We appreciate it very much.

Ms. GOLDMAN. Thank you.

Mr. GLICKMAN. We will call Mr. Riley next because I know that you have a conflict.

STATEMENT OF JOHN H. RILEY, ADMINISTRATOR, FEDERAL RAILROAD ADMINISTRATION, ACCOMPANIED BY JOSEPH W. WALSH, ASSOCIATE ADMINISTRATOR FOR SAFETY; THOMAS A. TILL, DEPUTY ADMINISTRATOR, FRA; AND LOUIS S. THOMPSON, ASSOCIATE ADMINISTRATOR FOR INTERCITY PROGRAMS

Mr. RILEY. Mr. Chairman, I appreciate your moving the schedule.

Mr. GLICKMAN. Sure.

Mr. RILEY. One of the problems that is inherent in administrative jobs I have discovered since I came up here from the Congress is that you work for several bosses, and another one of my bosses has me scheduled a little later this morning.

Mr. GLICKMAN. As I told Ms. Goldman, you may feel free to summarize or, if your statement is not very long, you may prefer to read your statement. Often when I tell witnesses to summarize, it lengthens it twice the period of time. So you use your own judgment to try to accelerate your testimony——

Mr. RILEY. I'll do that.

Mr. GLICKMAN [continuing]. Although we will have questions for you, obviously.

Mr. RILEY. Sure. Well, Mr. Chairman, I will stay as long as the committee has questions to ask. I just appreciate your moving the time so we could do the best to mesh our needs.

Mr. Chairman, unfortunately, this has proven to be a very timely hearing. Three days ago I came back from New York City—in fact, it was about three blocks from where I grew up as a kid—where I had gone to take command of FRA's part of the accident investigation on the Hellgate Bridge collision. That is the third time this month I have had to undertake that kind of activity and there is no joy in it.

This one for me, though, struck a little closer to home than any of the others, because until a few hours before that train departed, I was scheduled to be on it. Only a last minute—and, Mr. Chairman, I mean last minute—change of a meeting schedule put me on the immediately preceding train. Otherwise, I would have been here today to give you a first-hand account of what went on in that accident.

Well, Mr. Chairman, I don't think there is a more important issue that you could be considering this morning, and as you know, rail safety is the most enduring and by far the highest priority of the Federal Railroad Administration. This morning, in the time I have, I want to assist this committee in three ways:

First, since the committee is focusing on track safety, I want to lay out the hard numbers on track-related accidents and trace the trend they followed since adoption of the Staggers Deregulation Act 5 years ago.

Second, I will spell out for the committee the specifics of FRA's track safety program, as well as the changes I've made in that program, in my term as Administrator.

Now, I will not refer to the Amtrak accidents. Graham Claytor is coming behind me, and I think for the purpose of time I will yield both to—except for the committee's questions—both to Pat Goldman and to Graham Claytor to talk about that. But I have brought with me this morning three individuals so that we could give you a more complete answer to questions rather than have to insert things in the record at a later time.

To my immediate right is Joe Walsh, Associate Administrator for Safety; Tom Till, Deputy Administrator to his right; and Lou Thompson, who is head of our passenger services and was the engineer that headed the Northeast corridor improvement project, is to my extreme right.

Mr. Chairman, to set a framework for all of this, I want to begin with a review of the numbers, a review of what has actually happened in track safety over the last 5 years.

Now, as I am sure the committee is aware, the industry's overall safety record has changed dramatically since passage of the Staggers Rail Act of 1979. As the table to my left indicates, in each of the last 5 years accident rates have improved dramatically over the preceding year to the point where in 1983 we achieved, by any measurement, the safest year in the history of the railroad industry. Accident incidents were the lowest ever recorded, a remarkable 14 percent below the next best year. And that improvement tracks across every category of rail statistics.

But nowhere, Mr. Chairman, nowhere does that improvement show as dramatically as in the area of track safety. In 1979, the year before passage of the Staggers Act, track-related accidents were 239 percent more frequent than they are today, and that is what this chart illustrates. We have now complete accident data for the first 3 months of the current year—and it's about a 90-day reporting period here, so these are the most recent statistics. I am pleased to be able to tell the committee that this improvement has continued, that track-related accidents have declined an additional 6 percent through the first quarter of this year to the point where we have now amassed the best first quarter we have ever amassed since we began keeping statistics.

Now, Mr. Chairman, while this is obviously good news—and I think it is—there is a challenge for both of us in these statistics. The simple fact is that since deregulation and the cash flows it brings about of coming into being, the ability of a railroad or a Federal Railroad Administrator to make dramatic improvements in safety statistics with a small investment of money, in deferred maintenance, or better equipment, is pretty much behind us. The number of track-related accidents has gone down dramatically, and while the number of human factor accidents has also gone down, the percentage of human factor accidents in the mix has grown, and that really outlines the direction we need to focus in the future.

Human factors run the gamut from alcohol and drug, which is frankly the easiest human factor to address because we know more about it, to issues such as scheduling of crews, fatigue, boredom, and simple judgmental errors. It touches the edge of training. In the future, we are going to have to be as rigorous in the way we approach human factors as we have been on track safety in the past. Every percentage of increase that we get of betterment is going to be a lot tougher to achieve than the one that came before it.

Now, all of us—and I think the members of this committee certainly are included in that group—who have worked on track safety issues can take some satisfaction in the progress we have made in that area. The numbers speak, I think, persuasively for the commitment of the industry, for the dedication of railroad employees, and I think for the success of FRA's track safety efforts. But frankly, Mr. Chairman, while I would like to claim credit for all of this for FRA, the most important single factor behind this improvement is unquestionably deregulation and the increased cash flow that the industry has been able to generate since passage of the Staggers Act.

It was just 5 years ago—and, Mr. Chairman, let me digress for just a moment, if you could flip that chart. Two quick points that I think are worth making. In looking at track-related accidents, in light of the Amtrak collisions of the last few weeks, if you will note, Amtrak's record on track-related accidents is about 230 percent better than the industries as a whole. Amtrak's equipment-related accidents—and this is, I think, possibly the most interesting of all the charts—Amtrak's equipment-related accidents not only are significantly below the industries, but have scaled down to the point where they have just about hit zero.

Now, I have also had the opportunity to see the Japanese train, and it's a marvelous system. I would be the last to tell you that our technology is the equal to theirs in performance. But in safety, the equipment, the equipment that is used by our system, is the equal of any in the world.

Now, moving back to where I was a second ago, on to the next chart, I think this is the most significant thing. It was just 5 years ago that 22 percent of the Nation's track was in bankruptcy reorganization. The industry had a $12 billion capital gap, and there is no question that we were losing ground on deferred maintenance, and the safety numbers showed it. Today the railroad industry has something it hasn't had in decades—cash flow. And the reinvestment of that cash flow in mainline trackage has virtually eliminated deferred maintenance from the mainlines. That investment, which is illustrated by these charts, is the single most significant factor in the reduction of track-related accident rates we have witnessed over the last half decade.

Now, the interesting thing about this, as the chairman knows, railroad expenditures on investment and maintenance of way tend to be cyclical. They drop dramatically during periods of recession. And during the severe recession of 1980 and 1981, in that era, look at the fact that railroad investment actually increased rather than decreased dramatically. That is a break with historic trends, an unprecedented break, and that is a direct reflection of the cash flow from Staggers.

If you look at the next chart which talks about railroad maintenance expenditures, you can see that what the industry did, when the cash flow from the Staggers Act, which is the epitome of a bipartisan accomplishment—it was passed by the Carter administration and defended by the Reagan administration—the railroads invested very heavily in catching up on deferred maintenance, peaking in 1981, and staying relatively stable since then, despite the recession.

Now, that's why I say deregulation has been the most significant factor in generating cash flow to address the track problems. But I am also convinced that FRA's track safety program has played a role, and I am equally convinced that with the knowledge we have gained, we can play an even stronger role in the future.

FRA impacts safety issues in three ways—as a regulator, an agency charged with regulatory enforcement, and as a promoter of research and development.

In our role as regulator, FRA has established a network of regulations governing track conditions throughout the Nation's rail system. Those regulations were adopted in 1971 and they have been amended several times. They set standards for track components, geometric parameters for components, inspection procedures, and mandatory remedial actions. Earlier this year, Mr. Chairman, I issued new regulations, extending their applicability of our track standards to urban commuter track.

Now, we enforce the regulations through a blend of on-site inspections, inspections by track geometry vehicles, and system assessments targeted to specific railroads. In 1983, which was my first year as acting and full administrator, FRA conducted 14,663 on-site inspections, covering 321,911 miles of track—and there are 330,000 miles in the country. That was a 20-percent increase, a 20-percent increase over miles inspected in the previous year. Since I came to FRA in November, I have increased the number of inspectors on our staff by 15 percent, to the legal limit of 325. For reasons that are very complex, we had never come close to that legal limit before. They go into the civil service hiring system. We put our heads together, resolved the problem, and we have hit our legal limits.

Now, I think with better productivity, from better technology, and these increased numbers, we will actually be able to intensify the coverage of our track inspection program in the future.

These on-site inspections are supplemented by the work of automated track geometry survey vehicles. And, Mr. Chairman, I don't know if you have had a chance to go out on either the Amtrak 10001 yet or the T-10, which we are hoping to modernize, but they are remarkable pieces of equipment. I extend the invitation. I think you would enjoy the experience. I would like to take a ride on them with you.

Through electronic sensors, this equipment measures, and displays and records track geometry data such as gauge, cross level, and curvature, the things that are governed by our regulations. After the data is gathered, we share it with the carriers.

Now, FRA played a leadership role at Pueblo in developing the track geometry technology, and we are actively promoting its use by individual railroads. Over the next fiscal year, FRA's automated track geometry vehicle will sweep about 25,000 miles of the Nation's most heavily used corridors. In addition, 13 railroads—and this is just a dramatic increase since the mid-1970's—13 railroads now have their own track geometry measurement vehicles. Just a month ago, Amtrak unveiled the 10001, which is a highly modern track geometry vehicle that will improve Amtrak's ability to monitor the trackage it owns and maintains. That will replace the track geometry vehicle that we bought for Amtrak's use on the Northeast corridor with the Northeast Corridor Improvement Program.

Finally, Mr. Chairman, FRA does a complete system-wide assessment on the safety performance of three railroads every year. We target that assessment based on the carrier's overall safety record. These assessments go beyond the railroad's physical plant to a detailed assessment of operating and inspection practices and the way they comply with our regulations. An intensified track inspection effort is part of that system assessment, and these assessments supplement our overall inspection program.

Now, the last way that FRA impacts safety is as an agency that promotes research and development. I think one of our greatest accomplishments is the development of the track geometry automation technology. We are pursuing, however, a number of additional areas today.

We have had an exhaustive and ongoing research program into the causes of track-related accidents, and I think the results of that program show in the numbers. That analysis focuses on four factors: the first is rail failure; the second is failure of fasteners and cross ties to keep track from expanding under the pressure of rail operations; the third is track buckling due to high heat—and we had an example of that just a few months ago—and finally, track-train interaction.

On rail failure, rail failure begins with cracks in the crystalline structure of the steel, cracks that are invisible, that have to be detected by some form of magnetic or electronic sweeping. Now, rail detection is a common practice all across the industry today, but there is no consensus on what the proper inspection and maintenance schedules are. We have an exhaustive research program going on at Pueblo, CO, that is designed to study how these cracks form, how they spread, the time span between the moment at which a track flaw forms and the point at which it becomes a danger to safety. The purpose of that research program is to develop an ongoing maintenance and research inspection schedule for all of the nation's railroads.

We had a very unusual case of rail failure a year ago in Marshall, TX. In fact, it took place the day after I was sworn in. I went down to Marshall. What we discovered was that the track involved in Marshall, TX, was a chrome vanadium, high-alloy, brittle but strong rail. And because of the unusual nature of that fracture—it didn't just break; the track literally exploded—we performed an exhaustive investigation of that incident. We called together railroad officials, engineers and academics on a special task force to evaluate the safety of that chrome vanadium rail. We contacted officials in Japan and in Germany and in Europe where that rail is in constant use.

The bottom line to that investigation—and the report has literally just been completed; in fact, I am, in effect, leaking it by talking about it today, but I think it's germane to the hearing. What it discovered was that the chrome vanadium rail itself is safe, but it needs special inspection procedures. It must be saw-cut, not torch-cut.

There were other problems at Marshall. The Missouri Pacific, which owns the track, failed to post a slow order after the repair and let an Amtrak train in at top legal operating speed over the site, and we cited them for that.

Now, on August 3 we have called all of the Nation's class I railroads to Washington to meet with the members of that task force to go over the details of our analysis. We have already communicated what we have discovered to them, so it can be grafted into maintenance procedures right away. But that's a prototype example of how I think you go about improving rail safety. We are past the era where there are great commonalities in all the accidents. You really need to go on a case-by-case basis, pick up the special messages there are in every one of these incidents, and take any action you need to take to make sure they don't recur.

Briefly on the other three points. On rail spreading, rails may spread apart under the pressure of train operation if the cross ties and fasteners are incapable or worn or simply not fixed in a way that enables them to take the stress. The research program we are doing here is designed to come up with a warning mechanism, a way to test through track geometry, if at all possible, what the stress characteristics of those pieces are so we can know in advance what the probability of rail spreading is.

Track buckling is very similar. Track, like asphalt, will buckle under certain weather conditions. This is what caused the Amtrak accident south of Philadelphia earlier this year. However, it is a very frustrating accident cause because it beats the signal systems we now have. We have signal systems on most of our track that can warn a train, detect any kind of track breakage. They work on an electrical system. The system is shunted. If the track breaks or if something falls across the track, it short-circuits the system. With a rail buckle, the rail jumps but it doesn't break. So the best signal systems that we have, or that anybody else in the world has, at this point can't detect a rail buckle.

In January of this year—and I didn't mean to be prophetic by doing this—I committed a $500,000 in research money as part of our research program to researching the cause of that and developing a way to adapt our signal systems to pick up the potential of a rail joint buckle. What we're wondering is if perhaps there's a difference in the amperage, something like that, that can be built into the signal systems to give us warning. Three months later we had the Philadelphia accident and I think it just drives home the need to maintain that research.

Finally, in the general area of track-train interaction, we went through a period in the mid-1970's when there were rock-and-roll derailments all over the country, and it has nothing to do with music. A rock-and-roll derailment comes from a resonance that builds into the movement of the cars that is based on certain demographics of the track. We have on the fast track facility out at Pueblo exhaustively researched different adjustments that can produce that rock-and-roll pattern. We now have at Pueblo a simulator through which a track geometry tape can be run and it will take—it's a marvelous thing to see. A couple of railroad cars sitting up on a track on a pendulum, and it will absolutely duplicate the performance of an actual piece of track based on that track geometry tape.

We have put together the broad outlines of new performance standards that are designed to avoid rock-and-roll derailments. As we have learned from pieces of that puzzle, we have gone out and implemented them in our track inspections, and that's one of the reasons that the rock-and-roll derailment has gone from a monthly occurrence to a virtually nonoccurrence over the last 2 or 3 years. We are now field testing the final results of that research, and I am very hopeful that before my term as administrator ends we can have a set of track standards that implements what we are already implementing in practice in our inspections, a program to stop rock-and-roll derailments.

Mr. Chairman, to sum all of this up, it has been a very frustrating last month, especially if—and I know you do, and I certainly do—you feel strongly about railroad safety. On the other hand, it has been, in effect, the worst of times and the best of times. It is rather easy, I think, just as it's easy when I used to work in the Senate, for constituents to say broad things about the performance of Congress, to say the railroad track standards don't do this, don't do that. But I remember Congressman Dick Ottinger, when I was growing up in New York, ran for the Senate, and he had the best campaign slogan I have ever heard. I wanted to copy it for the Durenberger campaign but I couldn't convince my colleagues. What he said was, "It's easy to talk; it's a lot harder to deliver." And there's truth in that.

The point that I make to this committee is the numbers for track safety today speak for themselves. The track safety standards that FRA has implemented over the last 5 years have delivered, on an annual basis, improvements in track safety and they have delivered to us the lowest number of track-related accidents we have ever experienced. I'm not satisfied with it. We can do more, we can do better, and we're going to continue to move as quickly as our knowledge of technology permits us to do.

Thank you, Mr. Chairman. It's a pleasure to be here this morning.

[The prepared statement of Mr. Riley follows:]

TESTIMONY OF
JOHN H. RILEY
FEDERAL RAILROAD ADMINISTRATOR
BEFORE THE SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS
OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY
UNITED STATES HOUSE OF REPRESENTATIVES
JULY 27, 1984

Mr. Chairman. This has proven to be a very timely hearing. Two days ago I returned from New York City, where I'd gone at Secretary Dole's request to personally direct the investigation into the cause of the collision on Hellgate Bridge. It's the third time I've undertaken that difficult responsibility in the last thirty days. But this most recent accident struck closer to home, because until a few hours before it departed, I was scheduled to be aboard the northbound train involved in the Hellgate collision. Only a last minute change in a scheduled meeting put me on the immediately preceding train.

Railroad safety is the highest priority in this agency. In the time I have this morning I intend to contribute to the Committee's effort in three ways.

First, since the Committee is focusing on track safety, I want to lay out the hard numbers on track-related accidents, and the trend they've followed since passage of the Staggers Rail Act five years ago.

Second, I'll spell out for the Committee the specifics of FRA's track safety program, as well as the changes I've made in that program in my eight months as Administrator.

Third, I'd like to share with the Chairman the data we now have on the four Amtrak accidents that took place this month. It's revealing data, and it says a great deal about the directions we need to follow in rail safety enforcement over the next half decade.

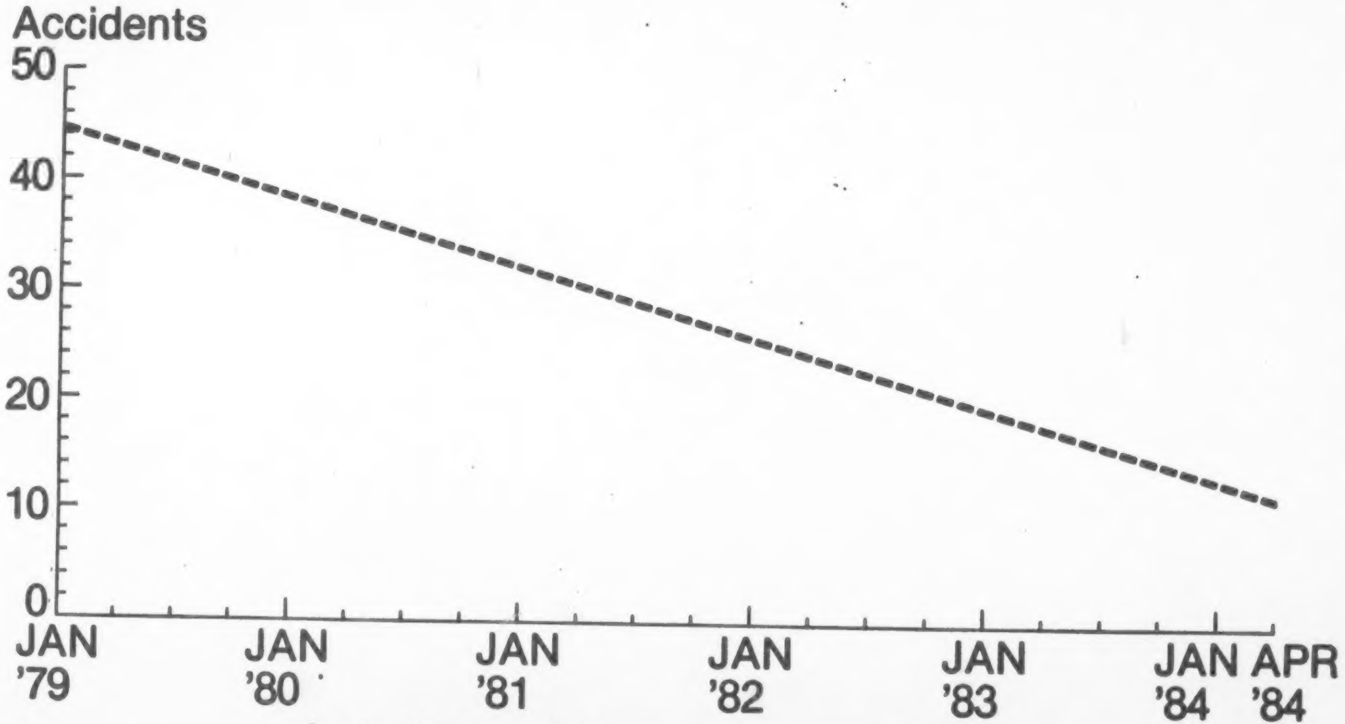
Finally, I have brought Joe Walsh and Lou Thompson, the key FRA officials responsible for safety and for Amtrak's operations with me this morning. We will remain as long as the Committee desires to answer questions on those accidents, or on any aspect of Amtrak's operations.

To set a framework for all of this, let's begin with a review of the numbers--a review of what actually happened in track safety over the past five years.

As I'm sure the Committee is aware, the industry's overall safety record has changed dramatically since passage of the Staggers Deregulation Act in 1979. As the following table indicates, in each of the last five years, accident rates have improved substantially over the previous year.

Accidents By Year
Industry

Linear Trend
All Causes



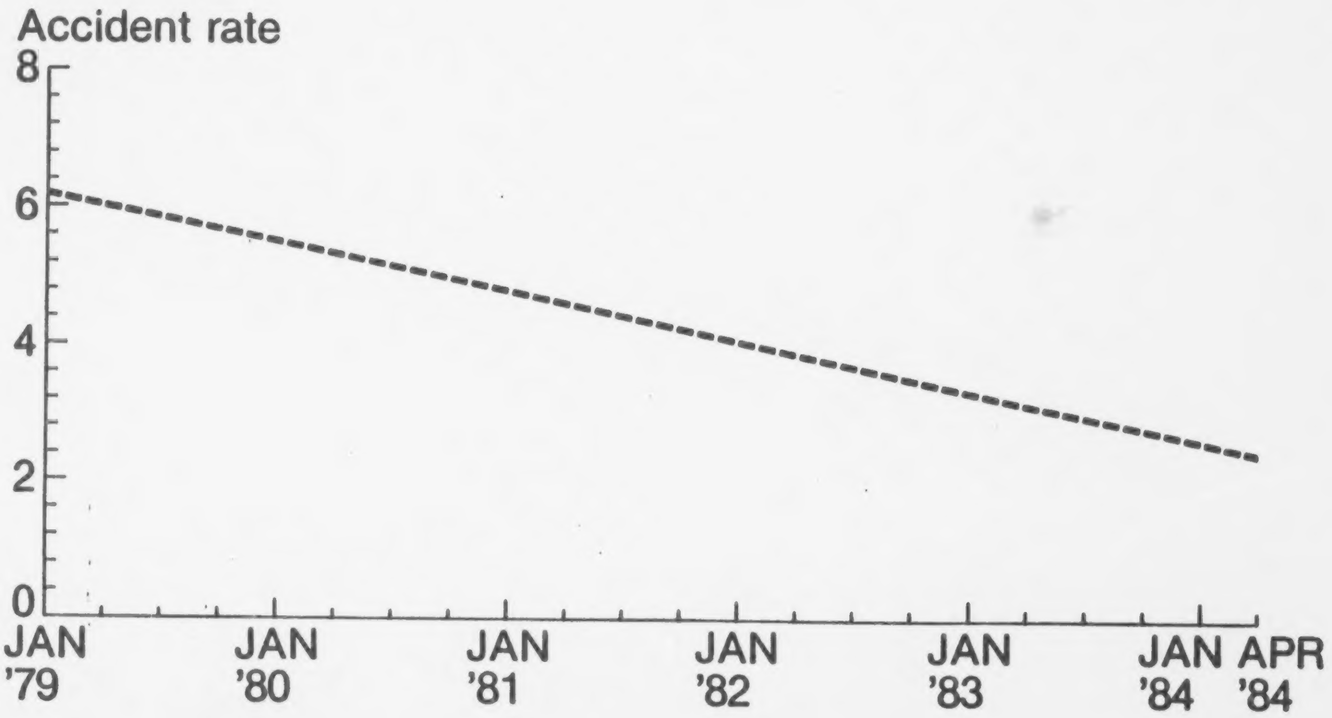
Industry accidents are 1/20th actual

The year of 1983 was by any measurement the safest year in the history of the railroad industry. Accident incidence was the lowest ever recorded, a remarkable 14 percent below the next lowest year. And that improvement shows consistently across the full spectrum of categories in which rail safety statistics are kept.

But nowhere, Mr. Chairman, has the improvement been as dramatic as it has been in the area of track safety. In 1979, the year before passage of the Staggers Act, track-related accidents were 239 percent more frequent than they are today. This is illustrated in the chart on the next page.

Accidents Per Million Train Miles Industry

Linear Trend
Accident Cause = Track



We now have complete accident data for the first three months of this current year, and I'm pleased to be able to tell the Committee that this improvement is continuing. Track-related accidents have declined an additional six percent from last year's record levels, leaving us with the best first quarter we've experienced since the Department of Transportation began keeping records.

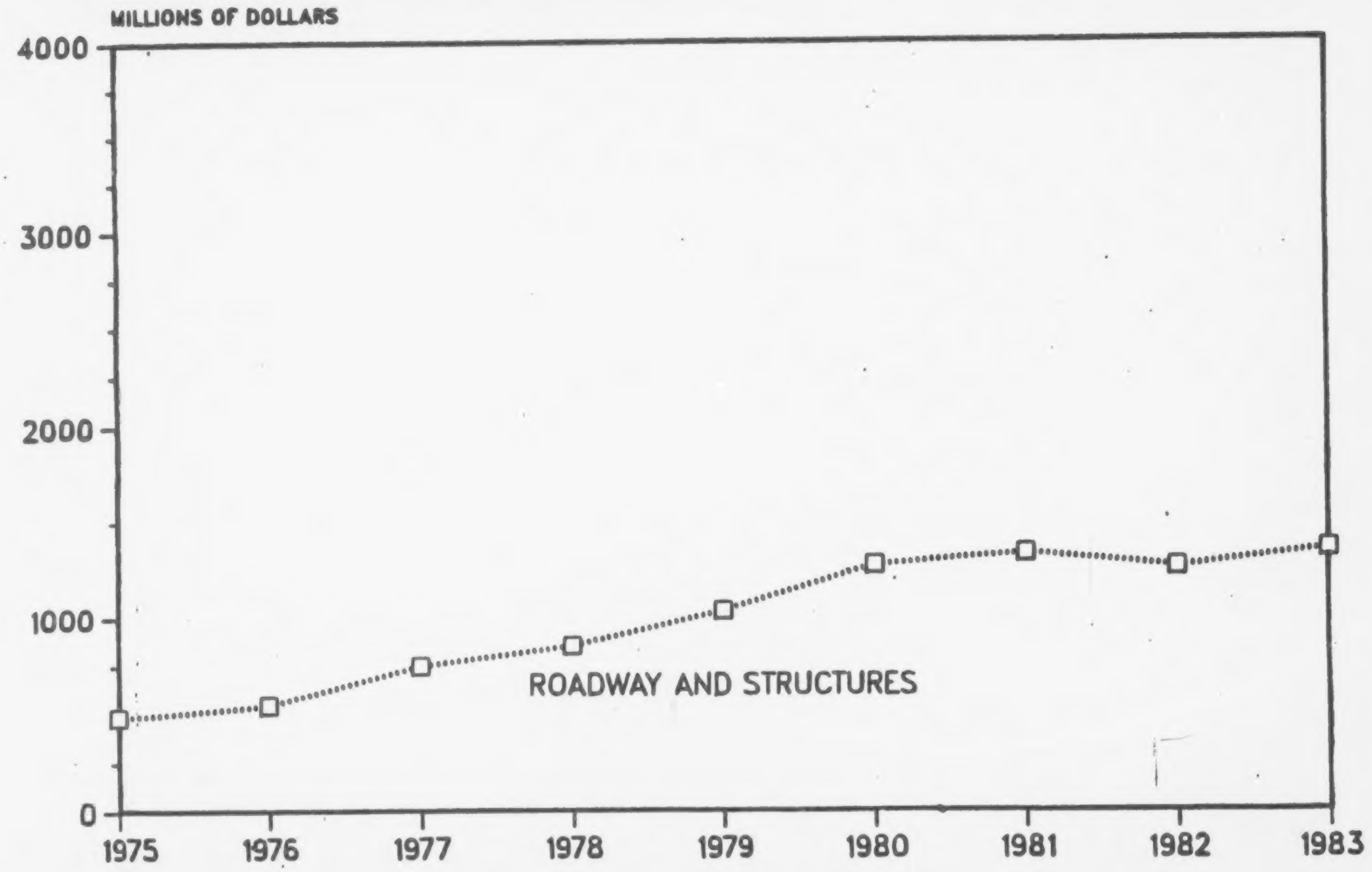
This is obviously good news, but Mr. Chairman, there is a challenge for both of us in these statistics. The simple fact is that the days in which a railroad--or a Federal Railroad Administrator--could make dramatic progress in safety statistics by investing a few dollars in upgrading deferred maintenance are long gone. The decrease in track-related accidents suggests that if we are going to continue the downward trend in railroad accidents, we are going to have to focus our efforts on the far more difficult arena of human factor accidents. They run the spectrum from alcohol and drug problems--which are actually the easiest human factor to address--to the more complex arenas of fatigue, boredom, and human judgment. That's where today's challenge lies, and every percentage of improvement will be a lot harder to earn than the one that came before it.

All of us--certainly including the members of this Committee--who've worked on the track safety issue can take some satisfaction in the progress we've made in that arena. These numbers speak persuasively for the public safety commitment of the industry, for the dedication of railroad employees, and, I believe, for the increasing effectiveness of FRA's safety program. But the more important single factor is unquestionably deregulation, and the increased cash flow the industry has been able to generate since passage of the Staggers Act.

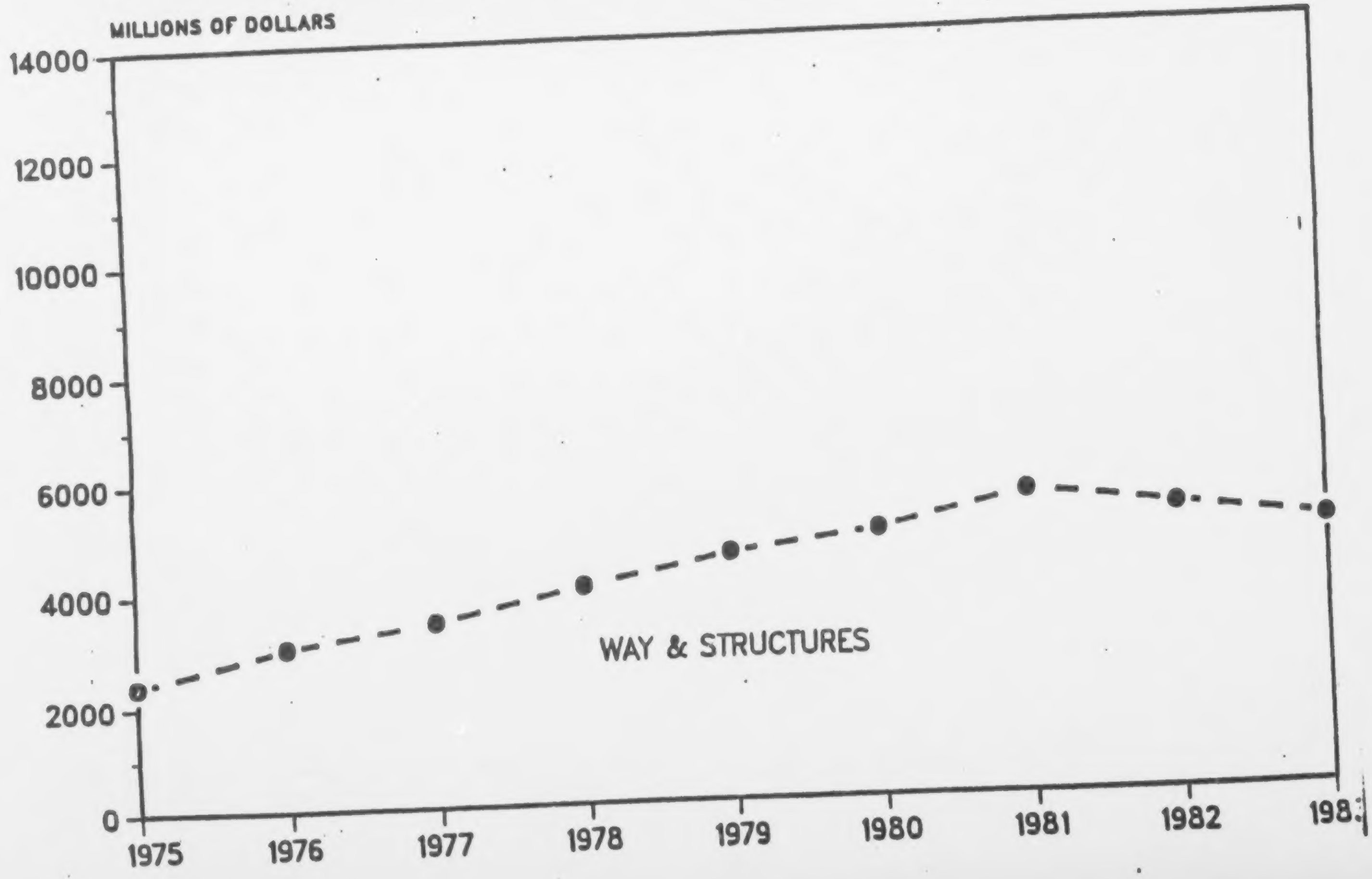
It was just five years ago that 22 percent of the nation's track was in bankruptcy reorganization. The industry had a capital gap of more than $12 billion. We were losing ground to deferred maintenance, and the safety statistics showed it.

Today the railroad industry has something it hasn't had in decades--positive cash flow. And the reinvestment of that cash flow in mainline trackage has virtually eliminated deferred maintenance from the nation's mainlines. That investment--which is illustrated by the following charts--is the single most significant factor behind the reduction in track-related accident rates we've witnessed over the past half decade.

Railroad Capital Expenditures



Railroad Maintenance Expenses



I'm convinced that FRA's track safety program has also played a role in those accomplishments. And I'm equally convinced that with the knowledge we've gained, we can play an even stronger role in the years ahead.

FRA impacts safety issues in three ways--as a regulator, as an agency charged with regulatory enforcement, and as a promoter of research and development.

In our role as regulator, FRA has established a network of regulations governing track conditions in the general railroad system. Those regulations, adopted in 1971 and subsequently amended several times, set standards for the condition of track components, geometric parameters for such components, inspection procedures, and mandatory remedial actions. Earlier this year I issued new regulations expanding those requirements to urban commuter track.

We enforce the regulations through a blend of onsite manual inspections, inspections by track geometry vehicles, and system assessments targeted to particular railroads. In 1983, FRA conducted 14,663 onsite inspections covering 321,911 miles of track. That's a 20 percent increase in miles inspected over the previous year. Since I came to FRA in November, I've increased the number of inspectors by about 15 percent to 325. That's the first time we've been staffed to our authorized maximum, and with improved productivity from better technology, I believe we can intensify our coverage in future years.

These onsite inspections are supplemented by the work of automated track geometry survey vehicles. Through electronic sensors, this equipment measures, displays and records track geometry data as it passes over the track. The data collected reflects track geometry characteristics such as gage, cross level, and curvature that are governed by the FRA track standards. After being gathered, the survey data is processed and then provided to the carrier for appropriate follow-up action.

FRA played a leadership role in developing track geometry technology, and we are actively promoting its use by individual railroads. Over the next fiscal year, FRA's automated track geometry vehicle will sweep 25,000 miles of the nation's most heavily used corridors. In addition, thirteen railroads have now commissioned track geometry measurement vehicles of their own, and just a month ago, Amtrak unveiled the 10001--a modern geometry vehicle that will improve Amtrak's ability to monitor the trackage it owns and maintains.

Finally, FRA does a complete system-wide assessment on the safety performance of three railroads every year. We target that assessment based on the carrier's overall safety performance. These inspections go beyond an evaluation of the railroad's physical plant to a detailed assessment of the operating and inspection practices it uses to comply with FRA regulations. An intensified track inspection effort is part of the system assessment, and these assessments supplement our overall track inspection program.

As a promoter of research and development, FRA has conducted an exhaustive and ongoing analysis of the causes of track related accidents. That analysis has focused on four factors: rail failure, failure of fasteners or cross ties to restrain rail spreading, track buckling due to high temperatures, and track-train interaction. We are pursuing research initiatives on each of these topics.

Rail Failure. Rail failure usually occurs in the form of internal cracks that eventually break the rail. These cracks are normally concealed within the rail, and require electronic or magnetic inspection devices for early detection. Although there are methods available for detecting hidden rail flaws, there is no consensus on the optimum scheduling for such inspections. We are now studying the sources and growth rates of rail flaws with the objective of formulating a model inspection schedule based on track usage. In addition, we are pursuing productivity and detection capability improvements in electronic methods of rail flaw detection.

Rail failure was implicated in the Amtrak accident last November near Marshall, Texas. Because the rail break involved there did not appear to be a typical failure, I ordered formation of a Task Force to investigate the matter. The Task Force has completed its study, and I have invited representatives of the industry to a meeting on August 3 to review our findings in the hope that such accidents can be avoided in the future.

FRA's track regulations require each railroad, at least once annually, to make a continuous search for internal defects in all rail in FRA Track Classes 4 through 6, as well as all Class 3 Track over which passenger trains operate. The railroad industry owns and operates a total of 45 rail flaw detector cars, which together can cover almost 90,000 miles of track annually.

Rail Spreading. Rails may spread apart beneath a passing train, leading to a derailment, if the crossties and fasteners are not able to withstand the train's forces. We are devising methods to measure the ability of crossties and facteners to handle forces produced by passing trains, which may lead to the development of quantitative standards. We are also studying the performance of concrete ties and associated fasteners on the Northeast Corrior to detemine whether concrete ties necessitate different inspection requirements.

Track Buckling. In very hot weather an entire track segment may buckle because the ballast, subgrade, and fasteners are unable to withstand the forces generated by high temperatures. This phenomenon was associated with the Amtrak derailment near Philadelphia earlier this year. Track buckling results in a kink in the track and is a severe safety hazard because the signal system often will not detect the misaligned track, permitting a train to operate into the kinked area without restrictions. FRA is devoting about $500,000 of our safety research funding to studying methods for measuring thermal forces in rail and attempting to devise methods for detecting operating conditions and areas where track is likely to buckle. On July 17 and 18 we conducted a workshop on the results of our research in Cambridge, Massachusetts. Sixteen domestic and two foreign railroads participated in that session.

Track/Train Interaction. Certain track geometry conditions, such a series of low rail joints, can lead to excessive "rock-and-roll" of cars and ultimately cause a derailment. We have studied the various track and equipment conditions that can lead to unsafe operation, both theoretically and in field tests. Based on that work, we have developed a proposed performance specification dealing with the problem of "rock-and-roll" derailments and are in the process of validating our research through field testing.

Apart from these specific initiatives, we are studying the potential track safety impact of a number of the many changes now occurring in the railroad industry. Let me give you three examples. Average axle loads of rail cars are continuing to increase, which accelerates the rate at which rail fatigue failures occur. As I indicated earlier, railroads are making greater use of continuous welded rail because of its reduced maintenance costs, but such rail carries with it the increased risk of track buckling unless appropriate countermeasures are taken. Some railroads are considering wider use of rail lubrication to improve fuel efficiency and rail wear, but rail lubrication increases both the likelihood of critical rail flaws developing and the difficulty in detecting such defects. One of our goals is to anticipate, identify, and resolve the risks associated with such operational changes before safety is threatened.

Railroad Track Safety Programs. Every railroad is responsible for ensuring that its track complies with FRA's regulations, and must retain qualified personnel to inspect for deviations. In order to be considered qualified, a designee must be able both to detect deviations from our track standard and to prescribe appropriate remedial action to correct or compensate for such deviations.

The railroad industry uses a variety of means to meet its track safety responsibilities. Traditionally, track hazards were detected by visual inspection and corrected by a track foreman and section gang, who were responsible for a limited section of track. In recent years, railroads have largely abandoned that labor-intensive approach to track safety in favor of the fruits of technological advances. Many railroads are using continuous welded rail, which reduces the need for frequent attention to rail joints. Track machinery is widely used to rebuild track, freeing track forces from the need to perform continuing track maintenance work. This trend has permitted the railroad industry to significantly improve the productivity of its track maintenance forces, who are able to cover larger territories than previously thought possible.

SUMMARY OF MAJOR AMTRAK ACCIDENTS

Elgin, South Carolina. On July 4, 1984, a southbound Amtrak train struck a pickup truck at a rail-highway crossing in Elgin, South Carolina, killing both occupants of the truck. No train passengers or crew members were injured. The crossing is equipped with automatic flashing lights that were working as intended at the time of the accident. Based on our investigation, we have concluded that the collision was caused by the truck driver's failure to stop short of the crossing. We found no evidence that Amtrak's conduct had played any role in causing the accident.

McBee, South Carolina. On July 11, 1984, a northbound Amtrak train struck a tractor/tank truck transporting gasoline at McBee, South Carolina, on track owned by the Seaboard Coast Line. The collision and resulting explosion and fire fatally injured the locomotive engineer and truck driver, and seriously burned the locomotive fireman. No passengers were injured.

The rail/highway crossing where the accident took place is equipped with passive protection consisting of standard roadway signs. The tractor/tank truck was diverted from a nearby crossing equipped with flashing lights and gates because of ongoing highway repair work. Freight cars stored on parallel auxiliary tracks may have obstructed the truck driver's view of the approaching train, as well as the train crew members' view of the approaching truck. The train was moving at 62 miles per hour, below authorized speed for the location, at the time of impact and was being properly operated.

Our ongoing investigation of this accident is focusing on two issues: why the tractor/tank truck entered the track, and the Seaboard Coast Line's decision not to place a slow order or flagman on the track during a period in which there was ongoing track repair work in the immediate vicinity of the crossing. No allegations have been made that Amtrak's actions played any role in the causation of the collision.

As a result of this accident and the Elgin mishap, FRA has initiated an assessment of all rail/highway grade crossing warning devices within 50 miles of McBee.

Williston, Vermont. On July 7, 1984, an Amtrak train derailed on a track wash-out at Williston, Vermont, while operating at 59 miles per hour. Although our investigation is still in progress, the evidence gathered to date indicates that the wash-out occurred when a culvert under the track failed shortly before the approach of the train, after a severe rain storm.

The culvert had carried the run-off from its watershed for over 100 years. It had been inspected by an inspector of the Central Vermont Railway, the owner of the track involved, on June 20, 1984, and a Central Vermont track inspector had inspected the track over the culvert on the day before the accident. Neither inspector was aware, however, of a series of beaver dams located more than one-half mile up stream from the culvert. The dams could not be seen from the vicinity of the track. Between 6:00 p.m. and 11:00 p.m. on the night of the accident, a local storm deposited an estimated six inches of rain on the watershed drained by the culvert. The culvert carried the runoff during the storm, and a southbound train that crossed the culvert at approximately 10:35 p.m. did not encounter any problems. Sometime after the southbound train passed, one of the beaver dams apparently failed, flooding the remaining dams and causing the rest to fail in succession. The resulting surge of water caused the failure of the culvert and washed out the subgrade. The resulting gap was 50 feet long and 23 feet deep, with the unbroken track suspended above. The track had been twice inspected, and it's a matter of chance whether the conditions that caused this mishap could have been detected by any practical inspection system. We are, however, very carefully evaluating whether the railroad owning and maintaining the track--the Central Vermont--complied with an FRA track regulation (49 C.F.R. § 213.239) requiring a special inspection of track in the event of a severe storm that might damage track structure.

Hellgate Collision. On July 23, two Amtrak passenger trains collided on a viaduct in Astoria, Queens. One passenger was killed and 125 were injured in the accident.

The railroad on which the accident occurred consists of two main tracks equipped with automatic signals governing westward bound trains (Track 1) and eastward bound trains (Track 2). Track 1 had been removed from service shortly before the accident to permit routine maintenance of the catenary system, the overhead wires that transmit electric power to the trains.

Track 1 had been removed from service from a point in the Bronx called "Market" to a point in Queens called "Gate." At both locations there are systems of crossover tracks that permit trains to move from one track to another, and signals that govern train movements. Market is controlled by an operator at that location, and Gate is remotely controlled by an operator in Queens. Both operators receive directions from a train dispatcher in New York.

Amtrak Train 151, a westward bound train, received a train order at Market directing the train to operate against the current of traffic from Market to Gate on Track 2, the eastward track, with priority over opposing trains. Train 151 then entered Track 2.

Shortly thereafter, Amtrak Train 168 approached Gate, operating eastward from New York on Track 2. This train should have been stopped at Gate by a "Stop" signal until Train 151 had crossed from Track 2 to Track 1 at Gate, at which point the signal would display an aspect permitting Train 168 to proceed.

Instead of stopping at Gate, however, Train 168 entered Track 2 and proceeded east, where it collided head-on with Train 151 about one-quarter mile east of Gate.

Our investigation is centering on the reason that Train 168 passed Gate. We are investigating whether or not the signal at Gate was properly set by the control operator, and we are looking to see if Train 168 might have passed a signal requiring the train to stop.

We have already conducted exhaustive tests of the signal system, and have found nothing indicating that the system did not operate properly at the time of the accident.

The industry has come a long way in addressing track-related accidents, and its performance over the past several years is solid proof that the commitment of time and resources has been well worthwhile. We are acutely aware, however, that each year's accomplishments are the base from which the next year's progress is measured. I appreciate the commitment this Committee has traditionally made to railroad safety, and I can assure you that every one of us at FRA is equally committed to building on the accomplishments of the past.

Mr. GLICKMAN. Thank you. I think you had an excellent statement, and you certainly are an articulate person.

I think, in terms of Mr. Ottinger's slogan, I guess what disturbs me a little bit is that the public is watching and reading and thinks that the trains are delivering accidents at a greater increasing level than they have ever seen before, and that's, I think, what the concern is. The concern is not only is the railroad system safe in this country, but that the public believes that it's safe. I think that your testimony today gives me some confidence that you're not neglecting what I consider the long-term answer to the safety of the railroads which is appropriately doing the kind of research necessary to take care of some of these potential accidents.

Now, I would start out my questioning, however, by saying that, in listening to Patricia Goldman's testimony this morning, I think implicitly in the Safety Board's testimony there is the feeling that the FRA has come to some conclusions about accidents, particularly the Queens accident, which has a tendency to focus the blame on the easiest and simplest place to do that—human factors; somebody had a trace of cocaine in their blood or their urine.

I would ask you to respond to that because I think her general feeling was that this was a more systemic, system-wide type of problem area.

Mr. RILEY. Mr. Chairman, let me make it very clear—and I think I did this in my testimony yesterday—I made no reference in my prepared statement to the fact that there were any alcohol and drug traces found. I was asked a question by the chairman as to whether any evidence of alcohol and drug had been found in the accident, and my answer was, No. 1, yes, in one of the tests we had found miniscule traces of a cannibis derivative and cocaine, that in my judgment they were small enough that they were unlikely to have affected that accident. And third, I would make no statement on probable cause because we defer to NTSB for probable cause findings. That is my position on it.

I think if you look at that accident, there are three possible causes. One of them is equipment failure. We haven't ruled that out yet, but we have run that signal system through our full balance and battery of tests and it has passed them. But there are other ways that equipment can fail.

Second, the possibility that the engineer went through an absolute stop, and third, the possibility that the block station operator sent an erroneous signal down to—sent an erroneous signal down to the signal. And we did two things—we did one thing yesterday in my prepared statement, and that was release to the public what is a public record, which is the tape between the dispatcher—and it's the same thing as an airplane air traffic control tape—a tape between the dispatcher and the operator of that tower. And, Mr. Chairman, as the record shows, I refused to characterize that tape. It speaks for itself.

But I want to point out that there is concurrent jurisdiction between NTSB and FRA on a number of accidents. Last year we worked together on 11 accidents. As a matter of comity, we defer to the NTSB, and I think they do an excellent job for findings of probable cause on accidents that we both investigate. We pool our teams together. Each task force is composed of one member of NTSB, one member of FRA, and one member of the railroad being investigated, so we get all views tacked into that.

We also investigated 276 accidents that were not investigated by NTSB last year because of the broader responsibility to seek causation in all rail accidents.

Let me say this about human factor versus nonhuman factor. I can assure you, having felt the pressure, there is a great temptation when you're in this job to seek the easy solution to an accident, to say a piece of rail broke, a bad signal, cite the railroad or cite the employee. I think we have got to avoid doing that. If we do that, we miss the more subtle message. The point I'm making to the committee is that when the accident investigations are finished, as you spell out the final conclusions, you will see that the number of track and equipment-related accidents has dropped sharply as a percentage of all accidents. The number of human factor accidents has gone up. There is no easy way to solve a human factor accident, and we're going to have to become much more sophisticated in the way we deal with these things in the future.

Mr. Glickman. I suggest that you may want to take a clue from NASA that's doing a tremendous amount of work in human factors research——

Mr. Riley. Yes, very good.

Mr. Glickman [continuing]. To pick up on that research, because a lot of the same parallels are there with the work they do and the work that railroads ought to be doing.

Mr. Riley. Mr. Chairman, I agree with that very strongly. I'm glad you said that. We were discussing that this week in-house. I grew up in a NASA family. My father was involved, and it's a thrill to sit in this room. This is like bringing my childhood back. My father was involved in NASA. I think that some of the work—One thing that Federal agencies don't do enough, I think, is talk to each other and cross interdisciplinary lines, to seek commonalities in all the research——

Mr. GLICKMAN. At their—all their facilities—but at their Ames facilities they do an extensive amount of human factors work, and they have a relationship with the FAA, by the way, where pilots report problems without fear of being cited for things they have been involved with. They get anonymity and they are able to collate that at NASA and come up with some ideas. You may be——

Mr. RILEY. That's an excellent suggestion.

Mr. GLICKMAN [continuing]. Able to come up with something like that.

I would have to tell you, you showed me some interesting statistics about the decline of accidents, and I'm glad to see those. I wonder what percentage of that is reflected by the fact that there has been wide-scale abandonment of track by the railroads since the Staggers Act passed, so that there's just a lot less track in this country. I also wonder if the number of serious accidents have gone down in recent years. You know, I'm interested in the long-term trend of accidents, comparing major accidents versus minor accidents.

Mr. RILEY. The first question is easy to answer. The way we blend out those abandonments is that the numbers are normalized for mileage and volume. That's how you can compare them from year to year.

Now, I will tell the Chairman there is a slight bias in that, because as volume decreases or increases, it is not simply an arithmetic change. It tends to be a bit of a geometric change. But if I had to estimate for you, I would put that deviation in the 1-to 2-percent range. So the numbers are normalized. They are comparable.

Second, in terms of serious accidents, the best example I can give you on that is grade crossings. We have been able to—I say "we", and I certainly don't mean FRA, because the grade crossing accident program touches Federal Highway, Operation Lifesaver, the Congress, a range of areas. But, for example, the number of all highway fatalities is down about 5 percent over the last decade, which is good progress. Rail crossing fatalities are down about 33 percent over the last decade. Now, that may mean we didn't do enough before or that we're doing more now. But there is no question that when you—there is a thing called a "risk factor analysis." I'll be doggoned if I can explain to you how it works. But I have seen it, and I can supply this to the committee. There is a way of weighting in mileage to create risk factors, and to determine just how much the decrease in mileage actually means——

Mr. GLICKMAN. Let me get back to my question. Major accidents versus minor accidents. I want to make sure your statistics are accurate.

Mr. RILEY. Yes, there is no question. We haven't broken that down for the charts, but I would be happy to provide that to the committee.

[The referenced material follows:]

SERIOUS ACCIDENTS*

CAUSE OF ACCIDENT	1978	1979	1980	1981	1982	1983	1984 (First 5 months)
EQUIPMENT	19	12	11	7	7	7	3
HUMAN FACTORS	12	6	5	2	1	1	2
MISCELLANEOUS	17	13	9	6	7	0	1
TRACK	22	13	17	9	7	7	3
RAIL-HIGHWY XING	54	48	54	29	19	22	13
TOTAL SERIOUS ACCIDENTS	123	92	96	53	41	37	22
OTHER THAN SERIOUS ACCIDENTS	11,154	9,648	8,355	5,728	4,548	3,869	1,678

*FATALITY, EVACUATION OF 100 OR MORE OR 200 TIMES ANNUAL THRESHOLD - 900,000 IN 1983 DOLLARS

Mr. RILEY. Any definition of major accident, with the exception of a bubble, I think you'll see in the last month—and I hope it's a bubble, I intend to make it a bubble—the number of serious accidents has increased dramatically.

For example, in the late sixties and early seventies, we were averaging about 12 major hazardous material accidents a year, and that's almost—I mean, you think about that, it's shocking. We now—I don't even like to use terms "averaging"—we get one about every 2 or 3 years. I hope we're down to zero. We haven't——

Mr. GLICKMAN. I think you misstated yourself. You said the number had increased. I think you meant decreased.

Mr. RILEY. Decreased, yeah. The number of serious accidents has gone down. Now, on Amtrak, that won't be true for this month.

Mr. GLICKMAN. I would think not. [Laughter.]

Let me go through a couple of quick questions.

Mr. RILEY. Yes, sure.

Mr. GLICKMAN. My colleagues want to ask some as well.

Why did you lower your track standards in 1982, realizing that was before you came on board? But, you know, in my judgment, that was shocking. I don't know all the details about it. But do you intend to review it, after the whole series of accidents that have occurred recently?

Mr. RILEY. I can't comment on the process arguments that were raised by the last witness because I wasn't here, but I can comment on the substance. That action in 1982 was not a generalized lowering of the track standards. It did two things:

It was designed to keep light-density, agricultural branch lines in service under certain restrictions. Here's the pattern that developed. The railroads would go to the ICC and seek to abandon light-density branch lines, mainly in agricultural areas. The ICC would deny the petition. What the railroad would then do is just let the line go to hell to the point where we had to go in and embargo it under an emergency order.

Labor and management came to FRA with a request that we go in and do something about that. We negotiated a solution. What it came down to was this, that we would allow certain light-density lines—we called them, I think, "excepted" track, if I'm using the right phrase—to continue to operate at speeds below 10 miles an hour, and with restrictions on the kind of traffic that could be carried. We created a new genre of track. The railroads, in return, accepted minimum levels for conditioning that track.

That's what has been referred to as a lessening of the overall track standards, and I deny that it is. It encompasses a very specific special problem in the Nation's rail system, very common in my State and yours. I have a lot of excepted track in Minnesota, and there's a fair amount in Kansas.

In the 2 years since that change was made, we have had no fatalities, no major accidents, one reported derailment, and it was a derailment where there were no spills, no injuries, no accidents. So basically the bottom line is, when you get a derailment at 10 miles an hour—and I have seen this a lot on our short lines in Minnesota—they have to go out and jack the train up with a jack and they put the grain hopper back on the track. That's what that was designed to do.

Now, we also in the course of that revision increased the strictness of track standards in a variety of areas. For example, there were no standards particular to the concrete ties in the Northeast corridor. You could have 75 clips out of whack and you wouldn't be cited for it. We put in a tightening of the standards on the Northeast corridor, forced concrete ties to live by the same general standards as wooden ties live by. Based on our research, we made some alterations in maintenance schedules. So it's kind of a mixed bag.

Now, the NTSB recommendations were not a minor, small targeted revision. They recommended a major revision in all track standards. I am told, though I wasn't here, that the agency at that point did not want to reundertake that at that time. But their recommendations are still before us; they are one of the items we are looking at.

I will tell the chairman what our agenda is, and one can always be forced to react and be forced off your agenda. But the alcohol and drug rulemaking will close its docket on August 15, and I am committed to having that out by early September, mid-September if we can do it. We're going to follow that with two other proceedings.

Two things that just always baffled me about the railroad industry before I got this job was the inability of labor and management to agree on an approach to alcohol and drug and radios. We are going to do a rulemaking on radios in the railroad industry after that's over. We are also at the same time going to commence a rather——

Mr. GLICKMAN. To encourage better communication between the operator and switcher and all the parties, OK?

Mr. RILEY. I suspect we'll do more than encourage.

Then we are also going to do a very broad inquiry that I would solicit the committee's assistance with, given its scientific jurisdiction, on safety within the locomotive cab. There are only two places on a train where somebody can get killed on a freight train—the cab and the caboose. One thing that has come across to me in looking at these accidents in the last 8 or 9 months is how a locomotive cab tends to fracture and what the odds on an individual in that cab surviving the accident are. We have many fatalities when people jump out of a cab to try to avoid impact, and we are going to see what can be done by way of design standards to make the locomotives of the future more survivable. And then we're going back and look at track standards again.

Mr. GLICKMAN. OK. You won't ignore Ms. Goldman's recommendations, the Safety Board's recommendations on track standards then?

Mr. RILEY. We do not ignore any recommendations.

Mr. GLICKMAN. OK.

Now, I want you to try to answer these questions a little more quickly—

Mr. RILEY. Sure.

Mr. GLICKMAN [continuing]. Because my colleagues are getting itchy.

Mr. RILEY. I think Secretary Dole probably is, too, so I'll speed up.

Mr. **Glickman**. There's a Kansas connection there. You can hold it for a while.

I don't know if you have read the inspector general's vulnerability assessment of the FRA released in 1981-82, as well as the GAO recommendation that was done pursuant to Congressmen Matsui, Florio, and myself. There was some shocking recommendations in there about relationships between your inspectors and the railroads that they worked for some of the time, that they kept their seniority rights and continued to work for you, and went back to work for the same railroads that they worked before, inspected the track they worked on, all this kind of thing was brought out in that report.

Quickly, are you doing anything about it, and two, some people think that you're too cozy with the railroads, that there's not an arm's length transaction, that your investigations of railroad problems cause you to do nothing more than hardly slap the hand of a railroad if it does anything wrong, as opposed to what the FAA often does with respect to carriers.

I wonder if you would respond to that.

Mr. **Riley**. All right. Let me take those in kind of reverse order. Mr. Chairman, I don't think——

Mr. **Glickman**. I mean the agency. I don't mean you personally. I'm impressed by what I see from you personally.

Mr. **Riley**. If you had been at either of the last two rulemaking proceedings that we have undergone with petitions, I don't think you would say that the industry has treated us warmly. We have tried to be objective. We agree with them when we think they're right; we disagree when we think they're wrong.

There are areas where I have done two things. There are whole areas such as accuracy reporting statistics, where I have directed our people to go out and levy maximum fines for even clerical errors because of the importance of those numbers.

Mr. **Glickman**. What are the maximum fines? What's the worst fine you can levy against a railroad?

Mr. **Riley**. The worst fine—I'm going to yield to Joe Walsh on that, because I just tell them "fine them the maximum." But I also want to point out that when we—I used to try these cases. When you come in and you fine and cite a railroad and collect the fine, what you have done is fixed liability, that is an enormous sanction.

But, Joe, what is the maximum fine?

Mr. **Walsh**. The normal fine is $2,500; the maximum fine is $10,000.

Mr. **Riley**. And we have fines that are out there uncollected, that have built up over a period of years. We are very actively in the process of collecting those fines. By the same token, Mr. Chairman, I made a commitment to myself when I came in this job. For 4 years in Washington I was going back to Minnesota, which is where I think everybody ought to live, when this opportunity came up, and I decided that I was not going to give in to either of two temptations—one is, because we have a close relationship with the industry and must—to whitewash it in accidents—the second was that I was not going to give in to the public temptation to try to always picture myself as a crusader for the public by branding either labor or the industry with liability where they don't deserve it.

Mr. GLICKMAN. We expect you to be a crusader for the public, not necessarily brand anybody with liability. But don't fear being a crusader for the public.

Mr. RILEY. No, I intend to be a crusader for the public, but I'm not going to give in to the temptation that creates to be unreasonable to either the public or the parties.

Mr. GLICKMAN. A final question. What impact does Amtrak's agreement to protect railroads from liability have on rail safety?

Mr. RILEY. Mr. Chairman, I am not an advocate of that agreement. I am not sure that its impact is as great as it might seem to be. Here's what I believe, philosophically.

I think, having been a lawyer, that the apportionment of liability among the parties is a great sanction. That's one of the things that forces people to be responsible. To the extent that Amtrak indemnifies the underlying carrier for passenger injuries, that is less incentive on the underlying carrier to do its job.

Now, I don't know how you solve that problem because the alternative is that the underlying carrier may just take out an insurance policy and in some way pass the costs of that insurance back to Amtrak in a trackage fee. But I think that's a very legitimate question—and I won't be here to hear Graham Claytor, but I will read your transcript to get the answer to that.

Mr. GLICKMAN. Thank you.

Mr. Carney.

Mr. CARNEY. Thank you, Mr. Chairman.

Mr. Riley, I would have to consider you the "Ernie Banks" of people who come before us to testify. It's a great day to be here.

Mr. RILEY. Ernie Banks never won a pennant, though.

Mr. CARNEY. No. And I also might point out that that slogan that Mr. Ottinger used was unsuccessful.

Mr. RILEY. Which means the public judges whether you really mean it.

Mr. CARNEY. However, we have had, as you called it, a blip in the statistics——

Mr. RILEY. I hope.

Mr. CARNEY [continuing]. In the last couple of months. Could you give for this committee a reason why you think that might—why that has occurred, not might have occurred?

Mr. RILEY. I wish I could give you an answer to that, and that's maybe the ultimate objective of all the investigations that we're carrying on.

Now, we are doing a number of system assessments out on the western railroads where those accidents occurred earlier this year, because we felt there was enough of a possibility of a commonality there to make it worthwhile going in and looking over the entire system, and I may have some answers from that.

The Amtrak collision, I did not go into the details of them for time's sake and because Graham is following me. But my view of them is, when you look at them, you've got two grade crossing accidents, one of which is a pure grade crossing accident—the flashers were working and the truck just runs the gate. The second one is a case where not only does the truck go immediately into the path of a train moving 62 miles an hour, but there are a series of boxcars lined up on a spur owned by the Seaboard Coast Line which may have restricted the visibility of the driver—two issues there, that and the operation of the truck. Neither of those cases can you really say Amtrak was more than a victim.

In Vermont, there's some interesting questions that come out of Vermont. FRA does have a requirement that after catastrophic weather systems move through—and I'm obviously generalizing the requirement—that special track inspections be performed. Conversely, that railroad did go out and inspect the track twice that day. Amtrak came down with no knowledge of the break and went right off the culvert.

There's a lot of history to that accident. Graham Claytor will give it. I'll just tell you my personal opinion is that the accident itself was about as close to an act of God as you can create. The lessons we're trying to learn from it are whether the railroads ought to be monitoring—or that particular railroad ought to be better monitoring National Weather Service forecasts and whether their track inspection was adequate, which it may have been.

The accident in New York is different. The accident in New York, all factors were under Amtrak's control. I think it raises a broad range of questions, from the suitability of the equipment involved and how modern it was, and did it work, right through human factors, to training, to employee selection and assignment. You know, it's not as easy as saying a wrong order may have been given from the block tower. That can trace back in terms to other things.

So when you look at those four accidents, I can't find a commonality among them, and I can only refer you back to last year. Last year, 70 percent of the serious accidents and fatalities that we had in the year occurred in an 8-day period. I don't know why.

Mr. Carney. We come back to another question. We're talking about human error in many of these accidents. And I think a lesson that we've learned in the aviation industry was we were quick to use the expression "pilot error," and then we learned of things such as wind sheer and microburst, where I'm sure there were plenty of aircraft accidents that, if we had the knowledge back then, we would not have attributed it to pilot error. We would have attributed it to the wind phenomenon or whatever the case may be as we go on.

I would hope that we're not falling into that same situation with the operation of our rail lines, where it is—I shouldn't say easy. We could be entrapped into coming to the conclusions of human error being the conclusion or the causative factor of an accident when, indeed, we just don't have the capability to investigate the accident to a deep enough depth to really find out what the cause of the accident was.

Mr. Riley. Well, I think that is a danger that everybody has got to keep in mind at all times. If you look over the pattern of the accidents we've had this year, to the extent there is a pattern, the kind of errors that we're talking about are switches flipped the wrong way, sleeping in the engineer cab, a dispatcher on a tape in one case directing two trains on to the same line. There are multiple implications of that. Yes, it is human error. But it also makes you question what produces human error—fatigue, the assignment of the crews in some cases, boredom in others, the adequacy of training. So let me say that human error is a very broad word, and human error should not be read to indicate that employees cause all these accidents because in many cases, if not most, where an employee makes an error, you can trace that right up to the way that that employee was selected, trained or assigned. It is not something that separates employee from management. It tends to be very much of a joint responsibility.

As far as technology goes, we don't even look to a human factor or consider it until we have run every single test that we have yet devised on every piece of equipment out there, and frankly, Mr. Chairman, I hope, I hope that we can find areas of performance and demographics and equipment that we have been unaware of, because they are so much easier to reach out and solve.

Mr. CARNEY. I would agree with you, and certainly I am pleased that you have such enthusiasm about working with NASA and other agencies on this factor of human error. But I would again encourage you not to fall into that trap of pointing to human error when, indeed, it perhaps might be something else.

Finally, I have a question that I asked Miss Goldman, and that is, would you please provide for us your side of the decision in 1982 to reject the National Transportation Safety Board's recommendations for track standards.

Mr. RILEY. Sure.

Mr. CARNEY. I don't want to get into it at any great length at this time, because there are other witnesses and——

Mr. RILEY. We'll do that.

Mr. CARNEY [continuing]. Other members who have questions.

Mr. RILEY. We'll be happy to do that.

[The referenced material follows:]

On February 18, 1982, FRA published a notice of proposed rulemaking that was limited in scope to the clarification and elimination of certain provisions contained in FRA's existing track regulations. The basis of the proposed changes was a set of recommendations jointly submitted to FRA by the Railway Labor Executives' Association and the Association of American Railroads.

The National Transportation Safety Board objected to the limited scope of the proposed changes on the ground that extensive changes to FRA's track rules were needed. After reviewing NTSB's comments, FRA concluded that the Board's proposals required long term study and analysis. In the short term, however, it was the unified judgment of FRA, RLEA, and the AAR that there was a pressing need to remedy certain identified problems with FRA's track regulations. Accordingly, FRA decided to issue a final rule based on the RLEA/AAR recommendations and to address the NTSB's concerns in the future in a different proceeding, as part of the continuing evolution of FRA's track regulations.

Mr. CARNEY. If I may, you briefly went over with the Chairman the statistical data that you presented to us today and said that you have compiled into that data the reduction of track since——

Mr. RILEY. Normalization.

Mr. CARNEY [continuing]. The Staggers Deregulation Act.

Would you care to perhaps give your feelings as to the types of track that might have been abandoned?

Mr. RILEY. The kinds of track that were abandoned were unquestionably the tracks in the poorest operating condition. By the same token, they also tended to be the tracks that were under slow orders and speed restrictions. What we have discovered is that, amazingly, it isn't true that most of the accidents happen on the light density lines. In truth, fewer of them happen on the light density lines because the trains operate at lower speeds and people are very cognizant of the danger. We find that most of the accidents happen out on the main lines. But basically what has been—rarely do you see a top flight, top quality gold-plated line abandoned, because the railroad wouldn't have invested that kind of money in it if it had good volume. The only time you ever see that is where you have a merger. So the lines that have been abandoned, in my State of Minnesota, have been agricultural branch lines, and I got started in the railroad business fighting railroads to fight abandonments on those agricultural branch lines.

Mr. CARNEY. And you have taken into account that factor in your statistical data, the types of track that have been removed, not just the pure mileage?

Mr. RILEY. The statistical data is normalized by ton miles. One thing it does not take into account is the kind of track that has been abandoned. But the point of my answer is that we have found, as we have with the excepted track, that on the light density branch lines that are abandoned, which generally are under slow orders, your accident incidence is way below—especially serious accidents—is way below what it is out on the main lines, amazingly. I thought that would be reversed and I have found it not to be true.

Mr. CARNEY. I thank you very much for your testimony. It was very clear and you certainly do bring enthusiasm to this committee hearing. And if you hadn't mentioned it in your testimony, I would have thought that you were trained in the House and not the Senate. [Laughter.]

Mr. GLICKMAN. He's such a diplomat, isn't he?

Mr. RILEY. I will say this. We don't have rooms like this in the Senate. This is a lovely hearing room, it really is.

Mr. GLICKMAN. Mr. McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman. Many of the areas have been covered. I have a couple of areas, though, that quickly I would like to move through.

Before I do, my reference, Mr. Chairman, to airbags a little while ago had to do with engine cab safety and not due to the chairman. [Laughter.]

We have a document here, and the staff has been kind enough to put in it the 1983 statistics dealing with a summary of casualties, page 67, 575 at railroad crossings, 498 listed as other. If we take the other, then with my limited knowledge of the subject, which I readily admit, it would have to be the result of one of three things, as I see it: Equipment, meaning the rolling stock, anything to do with the operation of the train as a piece of equipment; the railbed; or third, the operator operation, meaning the human aspect of it.

Is there readily available a breakdown of others under these summary of casualties, this summary of casualties, where we could zero in on one of those three, or are there other categories?

Mr. RILEY. There are others. The next biggest category are trespassers. For example, we had just a few weeks ago—here in Washington in the last 2 days we had one which was ruled a suicide and one where a person was sitting on the track and didn't get off it. Trespassers are the second biggest group.

Mr. **McCandless**. That's something that no one can control, unless you put a fence on each side.

Mr. **Riley**. Well, I'm wondering. I don't know how you control it. Right now, what some of the railroads are doing is everybody who gets caught on the track they prosecute, or they send them a letter just outlining the dangers of that. I'm open to ideas. I think there may be some things we can do on it.

Mr. **McCandless**. What I'm trying to do here is zero in on——

If you find a cause of other than highway crossings to be of a major nature, how would you categorize these in terms of which would be the highest priority to work on to reduce the casualties? Which would be the second, the third, and so on?

Mr. **Riley**. I see, OK.

Mr. **McCandless**. Do you have something that you're working on, do you have that in your statistics and demographics?

Mr. **Riley**. I don't have it in my head but I would be glad to supply the committee with it. The one that does jump out of me is trespassers. There are also, as amazing as it may sound, like the second or third highest passenger fatality rate was from crime, crime in the areas adjacent to the tracks which are counted in those statistics.

Joe—let me yield to Joe Walsh for just a minute. Joe, do you have anything you want to add on that?

Mr. **Walsh**. Basically, I believe you're talking about our accident incident boards that we in the office of safety in FRA produce. There we give all of the numbers—and I would like to look at what you're talking on page 67 and break it down for you and supply it for the record.

Mr. **McCandless**. Let me give you an example so we don't take up the time.

If 498 casualties in 1983, which is in the other category, *x* percent were caused by one of these four, and that was the major percentage, then do you, as administrators of this agency, address this issue and say "where is it that we need to concentrate our effort" rather than going ahead with the broadbrush, shotgun approach of improving the whole system?

Mr. **Walsh**. We are continually analyzing all of the numbers and all of the accidents. That is where we focus our attention. If we see wheels or equipment or a piece of equipment that seems to be causing a larger number of accidents, then we focus in there, yes, we do.

Mr. **McCandless**. Then one of the members of the staff brought to my attention the fact that the Transportation Test Center was recently cut from the Federal budget and is now run by the Association of American Railroads. Are you, as an agency, satisfied that this test center is doing the job that it should be doing?

Mr. **Glickman**. That's the Pueblo center that's been referred to by Mr. Riley?

Mr. **Riley**. We still own it. It was leased to the Association of American Railroads on a 5-year lease. One of the reasons the transaction was handled that way is so we had the ability to guarantee that. I have been out to Pueblo. I have inspected about half of it. And I had to come back. It has performed every service we needed to perform. What we are trying to do there is develop a base of private sector business in the center that will carry some of the overhead, so that the Federal Government doesn't have to pay all the overhead as well as the project-by-project cost for our own reasearch. But they have certainly done all the research we have contracted out to them well.

I think Bill Harris, incidentally, who is really AAR's man on the test center, is here today and will be testifying later.

Mr. McCandless. Fine. Thank you.

Mr. Riley. Thank you.

Mr. Glickman. Thank you.

Just two quick questions. You said you had 325 inspectors. How many are track inspectors?

Mr. Riley. We have 88 of them that are permanently assigned as track inspectors. Virtually all of them are cross-trained in the discipline so we can increase or decrease that number as we need them.

Mr. Glickman. And have you reconciled yourself and complied with some recommendations from your inspector general on who those track inspectors are and, you know, their relationship with railroads? Have you made changes in the last 2 or 3 years on those points?

Mr. Riley. I have to say that that came in enough before me that I hadn't seen that report. We hire them off a—Well, let me yield for just a second to Joe Walsh.

Mr. Glickman. For example, do your track inspectors or your railroad inspectors retain seniority with the railroads?

Mr. Walsh. Yes, they do. That's under a collective bargaining agreement with the AFGE. We have had discussions with them about relinquishing their seniority.

Let me say this, Mr. Chairman. Since that report came out, we have taken action and we require 6 years of railroad experience before you can be a safety inspector in the FRA. So we have to recruit from the industry. But we do not allow the person we recruit to go back the first 2 years that he is working for us and inspect on the property that he came off. So we have made corrections there.

Mr. Glickman. How about more than the second year?

Mr. Walsh. After the second year, we find that they pretty much will move around. They in very rare instances might go back—if you live in Kansas, in Topeka in your area, and you go to Newark, NJ, or Chicago, where we usually have openings, after 2 or 3 years and a vacancy comes out in our Kansas City office, we find that these people do like to go back to their home area, and if there's a vacancy we in many instances allow them——

Mr. Glickman. But do they inspect the same railroads that they worked for?

Mr. Walsh. In some instances they could, but they have been with us long enough to determine whether or not they are going to be prejudiced or we have a problem with them.

Mr. Riley. Mr. Chairman, this——

Mr. Walsh. We have a collective bargaining agreement also with these people——

Mr. Glickman. I realize that. I don't know how much of a practical problem this is, but on paper it's just outrageous. Can you imagine if we had inspectors working for the FAA that were

United Airlines maintenance people, that were going to get their jobs back there? The public would be outraged with that kind of thing.

Mr. Riley. Mr. Chairman, this is a good question. It's the first time I've heard this one. We will go back and take a hard look at that one.

Mr. Glickman. Yeah. I think you need to take a look at those GAO and inspector general reports. You know, I think—again, building confidence in the system, it doesn't build confidence in the——

Mr. Riley. I have seen the GAO. I have not seen this one, which I will look at.

[The information follows:]

In order to avoid any conflict, the FRA has instituted a policy which prohibits, for a period of two years, a new inspector from inspecting that portion of his former employer's facilities where he actually worked as a railroad employee for the one year period immediately preceding his employment with FRA. Further, the FRA has determined that seniority rights and leaves of absence constitute an actual or an appearance of a conflict of interest. This determination has been appealed, however, and will be finally decided by the Department of Transportation's General Counsel.

Mr. Glickman. OK, we appreciate your being here. You have been an excellent witness, all of you have, and we thank you for being here.

Mr. Riley. Thank you, and thank you for adjusting our time for us.

Mr. Glickman. Mr. Claytor, Graham Claytor, we're sorry that you had to wait. We appreciate your being here very much. We know that the last three or four weeks probably haven't been the easiest time for you, but it is one of our responsibilities to try to protect the public interest here, and so we're glad that you're here. You may proceed as you wish. As I said, your entire statement will appear in the record.

STATEMENT OF W. GRAHAM CLAYTOR, JR., PRESIDENT AND CHAIRMAN OF THE BOARD, NATIONAL RAILROAD PASSENGER CORPORATION [AMTRAK], ACCOMPANIED BY DENNY SULLIVAN, CHIEF ENGINEER; AND JOSEPH CRAWFORD, CHIEF MECHANICAL OFFICER

Mr. Claytor. Mr. Chairman, thank you. I am very happy to appear before this commission, committee, particularly to emphasize the importance of safety and the use of modern technology to improve safety. My No. 1 objective is and has been the maximum safety for both our employees and our passengers.

I would like to say that I have with me, on my right, our chief engineer, Mr. Denny Sullivan, and on my left, our chief mechanical officer, Mr. Joseph Crawford, who may be able to help in answering questions.

I was president of Southern Railways for 10 years, from 1967 to 1977——

Mr. Glickman. You also were in the Defense Department, weren't you?

Mr. Claytor. I was Secretary of the Navy and Deputy Secretary of Defense.

Mr. GLICKMAN. Yeah. I met you once—you probably don't remember, but I went to meet Charles Duncan when he became Secretary of Energy and you were in his office at that time.

Mr. CLAYTOR. I was his successor as Deputy Secretary of Defense, right. Yes, sir.

But on Southern, when I first took over, we had I thought a rather serious safety problem because there hadn't been much emphasis on safety, and back—this was in the late 1960's—that tended to be true in lots of places.

There is an annual competition, the Harriman award competition, among all the railroads for safety each year, safety among employees, so many lost time accidents per 200,000 man-hours worked. Southern was right near the bottom of that list, and I got all of our people together and we agreed that safety was the No. 1 objective we had to have. Before I left in 1977, we won the Harriman medal and the foundation laid, we have won it four times—three more times since.

At Amtrak we have got the same spirit going. We have a top to bottom commitment to safety, and I'm talking about both facets—the passengers as well as the employees. My experience has been that a safety program is nothing but lip service unless you can get dedication, not only by the top, but by the people right at the bottom working on the line. And it is no good having those people dedicated if the top isn't positively behind them, too.

I think we have a top to bottom program in Amtrak for safety, and I'm determined we're going to win—we're now in the Harriman gold medal competition—and I am determined that we are going to win that down the road 2 or 3 years. It's going to take some work before we get there. But we are dedicated to that. A safe railroad is no accident, and I mean that in both ways in which it can be taken.

Now, in spite of a recent rash of accidents, I just want to mention for the record, to make very clear that I am satisfied that travel by Amtrak is still the safest way to go from one place to another in this country. I think that that is generally agreed to by the other witnesses who have gone before. At our hearing yesterday it was made very clear that Amtrak's safety record is, on accidents, better than the railroad industry as a whole, has been steadily improving. It's actually—I don't—the airlines kill more people but they carry more people. I think both we and the scheduled airlines are about equal in providing really safe intercity transportation.

The dangerous way to go is to ride in an automobile. It's 40, 50, or 60 times as dangerous as any travel by either Amtrak or the scheduled airlines. But to date, in 1984, a rash of accidents has occurred. There were nine line of road accidents, more than in any other recent period. Mr. Chairman, you asked the right question at the start of the hearing. Is there an indication that this rash of accidents are connected in some way and can be tied to a breakdown in safety, in safety precautions. I think the answer to that is clearly no. The important thing here is that there is no unifying thread or common cause connecting all of these accidents. They are totally different, in different parts of the country, on different railroads, from different causes.

In the business there is almost an old wives' tale story that accidents always come in batches. When they do come in batches, you always say that proves the rule. Certainly we had that experience on my other railroad. You would have 8 or 10 accidents in a very short period and then you might go 10 months without any. And then they would be equally spaced over a period. I think that's what we've had. I think this is a happenstance. It is an unfortunate one, and I hope we don't have any more. Nevertheless, there is one good thing, one saving grace that can be said about accidents. They enable you to find ways of preventing accidents in the future. Over the history of the railroad industry, I think you will find that almost every major operating rule that the railroads have, and many of the technical devices that have been developed, all came about because of an accident. So with these accidents, that's the approach we are taking. We are determined that we are going to find out ways of preventing each of the types of accidents that we have had this year, and we do that each time.

Now, in the interest of time, Mr. Chairman, this morning I would like to discuss primarily the four accidents that have occurred this month, and have accordingly been the principal focus of attention.

Mr. GLICKMAN. As I said, your whole statement will appear in the record.

Mr. CLAYTOR. Yes, sir.

Now, it is important to know that three of the four accidents that occurred this month, and actually six of the nine derailments that have occurred this year, occurred on our contract railroads where the trains were operated by their crews, on their tracks, with their dispatcher, and under their operating rules. Amtrak neither has the authority nor the ability to cause or prevent any of these specific accidents.

Now, this distinction is almost always overlooked by the press and the public. It's one of the frustrating problems of having this job, actually. It's one we have to live with. I don't see any way to change that. The public is interested in whether or not the train gets there all right, whether it's the railroad's problem or Amtrak's problem. We, as the operator and owner of the train, I think have to live with that problem. But we are extremely interested in safety on our contract railroads, and just as interested really as we are on our own railroads. We must, however, keep in mind that our trains, like their freight trains, are operated on their roads, under their responsibility and their rules, and they have to take that responsibility.

Now, two of the July 4 accidents involved grade crossings, and another one occurred yesterday at Monks Corner, SC, resulting in a fatality to one of the vehicle's occupants, but no injuries or significant damage to the train. And so I have not included that type of accident as a derailment.

As Ms. Goldman said this morning, these accidents really should be classified as highway accidents, not railroad accidents. But however they're classified, we've got to do whatever we can to avoid them.

The fact that another grade crossing accident occurred yesterday is not indicative of any adverse trend, even in these accidents. In

1983, on all railroads there was an average of 17 crossing accidents every day, and 1⅓ fatalities every day in such accidents. In that same year, 1983, Amtrak itself had a crossing accident somewhere on its 23,000-mile system once in every 2½ days and a fatality to auto occupants occurring once every 8 days. So the fact that we had another one in South Carolina is just a continuation of this statistical fact.

Now, I think crossing accidents, the crossing accident problem, is the most serious safety problem that is faced by all the railroads today. The good news is that these accidents have been diminishing every year and there are now only about half as many every year as there were 10 years ago.

Amtrak could have done absolutely nothing to prevent these accidents. Our locomotives have bright headlights and are equipped with strobe lights, and I know of no other technical devices that could help you. The whistle is as loud as it can be made, and in every one of these cases the whistle was blowing.

What's the solution? The best solution is to eliminate the grade crossing. Wherever that can be done, that does solve the problem. We have had a major Federal and State program to do this over the years and it is making great progress. But it is incredibly expensive. In many cases it will cost half a million dollars to eliminate one grade crossing. So this is a needed improvement in public safety as well as railroad safety, but it is expensive.

I am happy to say that in 6 weeks Amtrak will eliminate the last two grade crossings on our own line from Washington to New York, so that when that is done, by the completion of a highway bridge now under construction, we will have no grade crossings from here to New York. That will be the longest stretch of mainline railroad anywhere in the Northern Hemisphere that has no grade crossings at all on it. So I am very pleased with that.

I might add that in addition to the grade crossing elimination we are also fencing large portions of our north—of our right-of-way here in the Northeast corridor using jobs bill money that was especially appropriated to us for that type of thing. That also, while very expensive, is a great safety factor. It is already—the fencing we've got in already has reduced significantly the trespasser incidents. And from our standpoint, even more distressing than the trespassers who get on the railroad and get hurt or killed are the vandals, mostly teenagers, who pile stuff on the track in order to see what happens. You'd be surprised how much of that goes on. We have had incidents two and three times a week of spikes, old stones, barrels, other things, piled on the track while the kids go back behind the trees and watch the train hit it. In many cases, we have fortunately not had any derailments here as a result of that, but they have disabled the locomotive frequently and the train has had to wait there until we could send an engine out from the nearest place and pull it in. Those incidents are greatly assisted by fencing. And so I'm a great supporter of this.

That could not possibly be done in the country as a whole, where you have relatively light traffic density. But between here and New York we have the most heavily traveled piece of track I think in the Northern Hemisphere in the Western World, in this part of the world. And so I think that's a very good thing.

Two other things on grade crossings. The addition of the gates and lights, wherever that can be justified, again an expensive solution but helpful if there's enough highway traffic to justify it.

Finally, and more important perhaps than all of them, is Operation Lifesaver and other projects that we have, that the whole industry has, to educate people about how to stay off the tracks. Even with gates and lights, as was told this morning, there are many cases in which people are killed because they drive around the gates right in front of the train. That is a public eduction problem.

It is also a local law enforcement problem, because one of the things that I have found in dealing with this problem for nearly 20 years is that a large number of people are quite relaxed about taking a chance on killing themselves by driving across a track without stopping or looking. They get very upset if they get a ticket and get fined $25 or $50 for doing that. If they know that's likely to happen, they don't do it. They stop at the stop sign. Ridiculous but true. It has been very hard—I think we're making a lot of progress in this—but it's been very hard to persuade State and local police to take that seriously. When we started trying to get the police to issue tickets for people who cross the track without stopping at unguarded crossings—there's a stop sign there—they said, "oh, that's your problem. That's private property. We don't do anything about that." But we obviously can't put railroad police out there, and we wouldn't have the jurisdiction to arrest people on the public highway anyway.

That has changed. We're getting more cooperation now. But there is still that feeling in many jurisdictions, that this is not a local police problem, they've got other problems, and let the railroad take care of it itself. That really needs to be helped, because I think a universal police enforcement of this problem, known in the community, advertised, with fines issued, and that put in the paper, you'd be surprised how many people then are careful in crossing tracks who now don't seem to care.

Well, so much for that. I think we in Amtrak support the whole process of providing additional education here. We have educated, we have groups that go around on the Northeast corridor on our railroad system and speak to high schools and grade schools about the dangers of the railroad. We have movies that we show in the schools. We have educated many thousands of kids in the last 3 or 4 years about this in the hope that as they get older and start driving cars it will have an effect. I think more of that needs to be done, too.

Well, so much for the grade crossings. I don't know of any technology as such that can do anything about this. We have good technology on grade crossing protection. The problem is how much of it can we afford to put in and how many crossings. On Southern Railway I think we had two crossings every mile of railroad. That's just a big problem.

The next thing I want to talk about is the July 3 accident that was a washout from unexpected local storms up in Williston, VT, on the Central Vermont Railway. Now, as a practical matter, there is no practicable way for Amtrak to stop accidents such as these. They are often in remote locations, far from our operations center, and frequently local storms. We cannot possibly call the Burlington Northern in northern Montana and say we have a weather report that says there's going to be thunder storms in your area. That won't do any good, and we couldn't really do it anyway. We cannot get local weather reports from every county in the country.

There is a way to do it. We have some suggestions and, in fact, we have already instituted on our own railroad primarily as an example, as well as taking care of our own problems, a weather alert system that I think could be a model for what other railroads ought to do, and let me say in advance that a number of other railroads already do this—the Burlington Northern, Union Pacific, Southern Railway are three that I know of that have very good weather alert systems. But here is what our study shows we can do, and we are putting this into effect on our own railroad which is basically from here to Boston and a short stretch of road that we own and maintain in Michigan.

The National Oceanographic and Atmosphereic Administration broadcasts weather alerts for various regions, and the important thing is this is not national, and the national weather alerts don't do you much good. They're too general and they cover too big an area. These are regional weather alerts. Receivers, not expensive—I think they cost $45 or so apiece—can be put in the dispatchers' offices, and we'll also have one at our control center here in Washington just for information. These receivers are turned on by a tone that comes over the radio, and whenever there is an emergency weather alert, the receiver beeps and the message comes on.

The great thing about that is, if you just had a weather, continuously reporting weather in a dispatcher's office—the dispatcher's office is very busy doing all kinds of things—you wouldn't get it. This way, there's a bell, in effect, that rings and says "here's a weather alert" and then he gets it and copies it down.

Second, there are a number of private weather information services in addition to that one that will provide emergency weather warnings for designated areas through data terminals or personal computers that can be located in the dispatcher's office. This would be a backup. We are going to try that, too. We're going to put—I'm not sure both of these are needed. There might be alternatives. But we're going to put them both in with our dispatchers and with our control center for our railroad and test this out to see how that works. But, with that, we should have all the local weather alerts that you can get by that method for use on our railroad, and we don't expect to have this kind of washout problem.

There's a third thing that we ought to do anyway, and that is, make arrangements with local and State police. In each area—this has got to be local; it's no good trying to do it on a broad basis—to call the dispatcher in that area, giving them his telephone number to report any unexpected—any local storms, any local severe storms. The State police, if they have a tornado, will be alerted right away and be going out to see about opening the highways and that sort of thing. They should call the dispatcher and say what they have and where it is. He can then determine if it's in an area that would affect his railroad.

That is done on several railroads now, and I think it ought to be done everywhere. It doesn't cost anything. It's just a matter of getting it done. But I think in some ways a good police connection locally may be more effective than relying on the National Weather Services that frequently will miss severe local storms because they're such a small area. But the small area storm is frequently the one that does the damage.

Now, what does the dispatcher do? He will immediately, if the weather is in a place that would bother his railroad or would affect his railroad, he sends out a special track patrol. He then, by train order and radio, notifies any train that is going to be passing over that track before the patrol gets there, that there's a weather alert out, he should be on a sharp lookout and reduce his speed. I think that will stop these problems. I am very hopeful, that we are going to be working with the FRA and with our contracting railroads to do it.

But some suggestions that have been made I want to talk about as a matter of philosophy. This is not an Amtrak problem. This is not a passenger train problem. This is a railroad problem. The only way the two Amtrak trains that had washouts this year fell into the ditch, in effect, is because they happened to be along before the freight train came along. There would have been freight train wrecks exactly like that had our Amtrak train not happened to be first.

Freight train derailments can be just as dangerous, and in some type cases more dangerous, than passenger train derailments. Just trying to do something for passenger trains alone is not the way to answer this. It has to be done for the railroad operation; 15 years ago, shortly after I took over at Southern, one of our freight trains detailed in Laurel, MS. In the process, a liquefied petroleum gas tank car, several of them, caught on fire, three of them exploded, one of them rocketed over the top of high trees and landed in the town four blocks away from the railroad track. We ended up destroying the whole north end of the town of Laurel, MS, as a result of that derailment.

Now, that's the kind of thing you've got to stop, and it's the derailment that you need to stop, the railroad problem, not just the passenger train. We are going to do everything we can with respect to our passenger trains, but we've got to fix this so we don't have derailments on the railroad in addition.

Mr. GLICKMAN. Mr. Claytor, do you think you could summarize in about 5 minutes? We want to make sure we have time to ask questions.

Mr. CLAYTOR. I can summarize right now.

Mr. GLICKMAN. OK.

Mr. CLAYTOR. Let me quit right now.

The New York derailment has been discussed and I won't go into it, except to say that we—I agree with everyone else, that we're still studying the matter. It does look very strongly as if the direct cause was a manpower failure of some sort.

I agree with what both other witnesses said about manpower and how we must stop manpower failures. I have a better, an additional solution. Wherever there's a manpower failure, or could be a manpower failure, we need to try to provide a redundancy so that at least two people would have to fail or a man and a machine would both have to fail.

In New York, this whole problem will be taken care of within a year when we complete the new signal system that's under construction now between Sunnyside yard and the connection with Metropolitan Transit in August. We will then have a modern signal system, signaling on both tracks in both directions, and our basic system of having automatic cab signals in the cabs so they read inside the engine and having an automatic train stop so if the engineer disregards the signal the train automatically stops, which we have on most of the rest of our system now. That will be in effect on this system and it would have prevented—in my opinion it would have prevented this accident.

We are also looking at other changes for other parts of the system where we might not have that, to either amend our rules or provide signals in the dispatcher's office that would show him whether or not a signal he has ordered set has actually been set and not rely on the statement of the operator. I think that can be done and we're looking at that. This is the kind of thing we're trying to do.

Now, in conclusion, let me just mention this technology. We are interested in modern technology at Amtrak and we think we're ahead of most of the industry in a number of areas. We have cab signals and automatic train speed and stop controls already in place in most of our system, as I said. We are constructing the most complex centralized electric traffic control system between Washington and Philadelphia that there is in the industry. All of the signal companies who have looked at it have almost thrown up their hands and said, "this is the most difficult one we've ever tackled; we have never built anything as extremely complicated and as completely automated as this." We nevertheless have got it well under construction now. We expect to be testing it next year. It's going to be the most advanced train control system in the world in my opinion.

We also have developed ourselves and have in place on-board hot box detectors on most of our cars. That is, you can tell whether or not a journal is hot by reading—it reads out right in the engine on the train itself, not having to get something from outside.

We've already mentioned our new track geometry car. We have built that car at our own Beach Grove shops. It is now being tested. It will go into regular service within a month. It is, in my opinion, far and away the most advanced track geometry car in this country if not in the world. It has all the latest capability of reading not only track geometry, but also important to us, ride quality. That will be operating regularly over our system and will occasionally be used on other systems.

So, from the standpoint of safety, passenger ride quality and maintenance, I would just like to see—one other thing I would like to see is I would like to see the heavy freight that now operates over our line from here to New York taken off and put on other lines. I have mentioned this to other committees. The heavy freight trains that operate between Washington and northern New Jersey are very hard on our track. They require a lot of extra maintenance. They make the ride quality poor, and I think there's a safety problem in having those trains mixed with our high-speed trains. I would like to see them off. But that is not anything that we have any control over. As to the long-range objective that I have—and I hope that down the road maybe 5 to 10 years we can accomplish that. In the meantime, we are running it just as safely as we possibly can.

Mr. Chairman, thank you.

[The prepared statement of Mr. Claytor follows:]

TESTIMONY OF
W. GRAHAM CLAYTOR, JR.
PRESIDENT AND CHAIRMAN OF THE BOARD
NATIONAL RAILROAD PASSENGER CORPORATION
(AMTRAK)

Mr. Chairman, I appreciate the opportunity to appear before this Committee.

Allow me to state at the outset that the number one objective I have is to make Amtrak the safest railroad in the world for passengers, workers and the public. No one should ever be satisfied with a safety record until the number of accidents is zero. However, in terms of accidents per million train miles, Amtrak had the second best performance of any Class I railroad in the nation last year. Unfortunately, this year we have had a plethora of accidents which have had a wide range of unrelated causes. I am submitting for the record a summary of Amtrak accidents that occurred this year, and will discuss each of them briefly.

In broader terms, however, rail passenger fatalities have been extraordinarily low. During the decade of 1974 through 1983, there were over 470,000 highway fatalities and over 1400 fatalities on U. S. scheduled air carriers, but only 9 Amtrak passenger fatalities. Unfortunately, however, the press finds train wrecks both photogenic and dramatic, while the fact that relatively few people are killed or badly hurt in even very severe derailments is rarely emphasized. I repeat, however, that even one derailment, with or without personal injuries, is one too many for me.

I attribute the generally good rail safety record in considerable part to the excellent job the Federal Railroad Administration has done in working with Amtrak and other carriers in implementing safety regulations governing railroad freight and passenger operations. Another reason is that Amtrak equipment and personnel have been responsible for protecting Amtrak passengers in derailments. Amtrak equipment has held up remarkably well under the worst possible circumstances. Amtrak has developed and has had in effect for some time a comprehensive emergency procedures training program which all on-board personnel are required to undertake.

We initiated this program to deal with the most serious types of on-board emergencies. It was implemented in 1982, and since then almost 6000 people (Amtrak, contract railroad employees and service agencies along Amtrak routes) have participated in this training. These people all receive hands-on instruction in emergency procedures, and practice on a mock-up of an actual emergency situation.

Now, let's look at the string of accidents involving Amtrak trains this year. From January 1 to date, there have been nine significant line-of-road derailments or comparable accidents involving Amtrak trains--more than in any recent similar period.

When we look at the nature and causes of these accidents, however, it is clear that there is no causal connection or nexus between them. Those of us in the railroad business have often experienced times when accidents of various kinds seem to be concentrated in a short period, and other happier times when they are sparse. I am satisfied that analysis shows that the several derailments that were concentrated in the past seven months can only be designated as unfortunate happenstance, not an indication of any let-down in Amtrak's commitment to safe and efficient railroading.

First of all, it should be noted that six of the nine incidents--two-thirds--not only occurred to Amtrak trains being operated by crews of our contract freight railroads and on tracks owned and maintained exclusively by them, but also that they were incidents that Amtrak itself did not have responsibility, authority, or ability to prevent. I will summarize these first. Amtrak does, however, accept full responsibility for the other three accidents, which will then be discussed in more detail. This distinction is almost universally overlooked in press reports, but it is very important.

Three of the six accidents involving our contract railroads were grade crossing collisions with trucks--two on the Seaboard System Railroad and one on the Burlington Northern. The Seaboard accident on July 11 involved a gasoline tank truck and resulted in an explosion and fire with a fatality to the locomotive engineer, but no serious injuries to passengers or other employees; the other two accidents resulted in derailment of the train in both cases with no fatalities and some passenger and employee injuries.

Unfortunately, these types of accidents are not that unusual: they occur in considerable numbers every year and involve both freight and passenger trains. In fact, in my opinion, grade crossing accidents present the most serious safety problem facing the railroad industry today. The only way to eliminate these accidents altogether is to eliminate the grade crossings themselves. I am happy to say that, within the next two months, the last two grade crossings on Amtrak's high speed line between Washington and New York will be closed with the completion of an overhead highway bridge between here and Baltimore. The addition of gates and lights through federal and state funding programs is the next most effective answer. Even here, accidents can still occur and will, unless the public is educated about the deadly dangers of driving through flashing lights or around gates, or across unguarded crossings without actually heeding the sign to "stop, look and listen."

To help here, Amtrak, the freight railroads, and 42 states participate in a national safety program called "Operation Lifesaver," designed to reduce railroad grade crossing accidents through education, enforcement and engineering. This program is responsible, in part, for the recent decline in grade crossing accidents, but there is a continuing need to educate the public about the dangers of crossing railroad property. Amtrak contributes about $100,000 per year to the National Safety Council for this program.

Two other severe accidents occurred on our contract railroads as a result of severe weather damage to track shortly before our train passed--one on the Chessie System near Connellsville, Pennsylvania on May 29, and an almost identical accident on the Central Vermont Railway near Williston, Vermont on July 7. In neither case was the railroad aware of the washout.

Here again, sole authority and responsibility was with the operating railroad. Although specific local occurrences like this are beyond Amtrak's power to handle, we and a number of freight railroads have an effective weather alert system, and we are now significantly improving this on our own lines and strongly recommend the adoption of such procedures by all railroads. In this connection, I want to emphasize that this is a railroad problem, not simply a passenger train problem; a freight derailment, especially if hazardous materials are involved, could endanger as many or more lives and property than a passenger train derailment.

The system we are installing involves a special radio receiver in each of our several dispatchers' offices and in our Washington Control Center to monitor weather alerts in the areas where Amtrak dispatches its own trains (largely the Northeast Corridor and a short section of railroad in Michigan). Special broadcasts are made by the National Oceanographic and Atmospheric Administration which provide the latest weather information directly from the National Weather Service offices. Speakers are activated by a tone alert, even during power failures, that is issued by the local National Weather Service Forecast Office. They turn on automatically, with an explanation of the particular threat in the specific area in which it is most likely to occur. Upon receipt of such an alert affecting an area of our track, the dispatchers will order special track patrols, and trains will be notified by train order or radio to slow down and be on the lookout for washouts or track obstructions until the track they are using has been patrolled. This system is available in all parts of the country, and I would recommend it to every railroad, whether or not it operates passenger trains. Again, it can only work if those familiar with the railroad and responsible for its operation locally are the recipients of this type of regional weather data.

While this state of the art technology makes it possible to receive the most up-to-the-moment regional weather information available, it is only as good as the people who monitor it. Good judgment, along with good information, is an essential element in monitoring rail conditions.

We are also contracting with a private weather information system which provides information about critical weather occurrences along Amtrak's system. Forecast information on severe flooding, heavy snow, earthquake dangers, high winds, and extreme heat or cold along Amtrak-owned property will be available at a moment's notice through data terminals or personal computers through a telephone hook-up. Finally, and as an additional precaution, we are arranging for state and local police to call our dispatchers or operations center whenever they see a severe local storm or weather condition that might damage highways or our tracks or bridges. Again, this procedure is followed by some railroads, and I would recommend it to all of them.

The last of the six derailments on one of our contract railroads was also on the Central Vermont Railway on February 13. This involved no passenger injuries, but the derailment resulted from weak ties permitting the rails to spread slightly under the train. Conditions such as this are relatively rare on our contracting railroads, in large part because of regular track inspections by the railroads themselves and enforcement of FRA track safety standards. I am sure FRA will provide the Committee with specific details on these requirements, which basically call for twice weekly inspections on all Class 4 (60 mph) and above track, and on lower grade track if used for passenger service. FRA also requires railroads to conduct special inspections after unusual occurrences, such as floods, snow or rain. As a practical matter, these inspections can be done only by the operating railroad because they are the ones that have indispensable local knowledge of their railroads and those track areas that are most likely to be impacted by adverse conditions.

As I pointed out earlier, the remaining three derailments involving Amtrak trains this year occurred on our own railroad or resulted from a defect in our own equipment, and I take full responsibility for them. My objective in every case is to use such occurrences to develop new procedures or equipment that will enable us to avoid any repetitions in the future. I hope we will accomplish this in all three of these instances. I will discuss them in the order in which they occurred.

The first one of these was the derailment of our train 81--The Silver Star--that occurred at Kittrell, North Carolina on March 5, 1984. While traveling at 79 miles per hour, locomotive unit 378 sustained a broken axle on the rear wheel of the leading truck causing the engine and all cars to derail. There were no fatalities, but a large number of injuries, including five passengers and nine employees hospitalized. Estimated equipment damage was $7,817,000.

A complete investigation of the cause of the derailment was initiated by FRA, NTSB, Seaboard System Railroad, and Amtrak. The broken axle was sent to the AAR lab in Chicago for fracture analysis. Results indicate that the failure incident occurred not as a result of material conditions or flaws in the axle, but rather a failure of the suspension bearing lubrication at the pinion end of the traction motor armature.

Traction motor support bearings are common to both freight and passenger locomotives. Amtrak's maintenance procedures for support bearing inspection and lubrication were already the most stringent in the industry, but we are now going beyond this; in addition, an on-board hot-support-bearing detector system has been designed and is being tested at our Wilmington Shop for application on our locomotives. This system will be the first of its kind in the railroad industry and will provide early detection of heat in the traction motor support bearing area. This should provide adequate further insurance against any repetition of this unusual type of accident.

The second Amtrak derailment occurred at Philadelphia on June 8, 1984. Boston to Washington Train No. 169 derailed south of Arsenal Interlocking, due to lateral buckling of welded-rail track structure beneath the train in unusually hot ambient temperatures of over

100 degrees Fahrenheit. Contributing to this derailment was failure by Amtrak forces to temperature-adjust the welded rail in accordance with established policy instructions after having realigned track for construction of the Philadelphia Airport high speed line during the Fall of 1983. We are now establishing a revised procedure to insure the adjustment of welded rail whenever we perform maintenance or construction work which could have affected the capacity of the rail to adjust for temperature. This procedure will include checks at both the division and the regional level to require two independent determinations that these critical adjustments are in fact made.

The third derailment occurred on the approach to the Hell Gate Bridge on an elevated structure in Queens, New York City, on July 23, 1984. Two Amtrak trains, No. 151 and No. 168, collided approximately one mile east of Gate Interlocking (see attached track diagram). There were 106 injured and one fatality.

Because of work being undertaken on the catenary above Track 1, the normal southbound track, Train 151, bound for New York, was given train orders authorizing it to cross over to Track 2, the normal northbound track, and use it from the Interlocking at Market Tower to the Interlocking at Gate. The Operator at F Tower, which controls the switches and signals at Gate, was instructed to set the signals there to prevent any northbound trains from proceeding up Track 2, and to lock these signals in place. In accordance with railroad operating rules, he received copies of the train order as well as the order to set the signals, and he reported to the dispatcher that he had done so.

Train 168, bound for Boston, nevertheless, did not stop at this point as intended, passed through Gate Interlocking and collided with Train 151 on Track 2 about a mile and a quarter north of that point.

Evidence has been developed that the tower operator in F Tower failed to throw and lock the signal at Gate Interlocking in accordance with train orders and instructions, and this permitted Train 168 to pass the point at which it should have been held. This operator has been charged with violation of operating rules and instructions and has been taken out of service pending the formal investigation that is required by union contracts. The overall investigation of the accident, however, is still continuing.

In conclusion, I would like to emphasize that Amtrak's current route system consists of over 23,000 route miles in 43 states. Amtrak owns and maintains track in the Northeast Corridor, a right-of-way of 2611 track miles, 115 track miles between Porter, Indiana and Kalamazoo, Michigan, and 13 track miles between Post Road Connection and Rensselaer, New York. Wherever we operate outside of the Northeast Corridor, we contract with the private freight railroads to operate passenger service over their tracks.

Most of the track over which Amtrak operates (98 percent) has an electric signal system. These systems work by providing a low current through the rail. While the primary purpose is to separate trains, certain other conditions, such as an open switch or a severed rail, will also be detected. If there is a break in the rail, for example, a stop signal will be activated. Only a small percentage of our trains operate where there is no automatic signal system.

With respect to technology improvements, Mr. Chairman, I can only speak for what Amtrak has done for inspections of rail property that we own. We test all welds, make a visual inspection twice a week, and run a track detector car twice a year to detect any internal defects. Recently, Amtrak's Mechanical and Engineering staffs designed and built a track geometry car out of a converted Amfleet coach, capable of operation on the Northeast Corridor and elsewhere. This car is designed to operate on either regular or special trains so that it can measure technical track and ride quality factors in a "real world" environment. An advanced Track Geometry Measuring System installed in this car consists of sophisticated analog instrumentation and optical sensors capable of collecting track data at speeds of up to 120 miles per hour. The parameters measured include gauge, profile, curvature, cross-level, and alignment. The car also includes on-board accelerometers that register on a micro-processor the maximum vertical and lateral forces of the car body, and a closed-circuit television capable of inspecting both electrical traction wires and track. Video tape of the inspection is given to our engineers for evaluation and prompt corrective action. Instrumentation and data processing service associated with the Track Geometry Measuring System are the result of a joint effort by Amtrak, the Federal Railroad Administration and a private contractor. In my opinion, this is the most advanced equipment available today for track geometry and ride quality measurement.

1984 to Date

9 Line of Road Incidents

3 Grade Crossings

January 24, 1984 - Plant City, Fla.
SBD- Train #87, 1 unit, 6 cars, struck a flatbed truck at a highway grade crossing, derailing lead unit (train operating at approximately 58 mph)

0 fatal, 11 PAX and 4 emp. injuries of which 1 emp. hospitalized

March 15, 1984 - Bainville, MT
BN- Train #7, 2 units, 9 cars struck a tractor trailer truck at a highway grade crossing, derailing 2 units and 9 cars (train operating at approximately 79 mph)

0 fatal, 74 PAX and 11 emp. injuries of which 23 PAX and 2 emp. hospitalized

July 11, 1984 - McBee, S.C.
SBD- Train #82, 2 units, 14 cars struck a gasoline truck at a grade crossing. No equipment derailed (train operating at approximately 55 mph)

1 emp. fatality, 8 PAX and 13 emp. injuries of which 1 emp. hospitalized

2 Weather Induced

May 29, 1984 - Connellsville, PA
Chessie - Washout

0 fatal, 34 PAX and 9 emp. injuries of which 2 emp. and 2 PAX hospitalized

July 7, 1984 - Williston, VT
CV - Washout

2 emp. and 3 PAX fatalities, 172 PAX and 7 emp. injuries of which 28 PAX and 4 emp. hospitalized

2 Other Track Related Causes

February 13, 1984 - Vernon, VT
CV- Defective track (weak ties)
(wide gauge 44 mph)

0 fatal, 0 PAX injury, 2 emp. injuries of which 1 emp. hospitalized

June 8, 1984 - Philadelphia, PA
Amtrak - Welded Rail Heat Kink
(74 mph)

0 fatal, 60 PAX and 2 emp. injuries of which 2 PAX hospitalized

1 Miscellaneous

March 5, 1984 - Kittrell, N.C.
Amtrak - Broken locomotive axle

0 fatal, 123 PAX and 18 emp. injuries of which 9 PAX and 5 emp. hospitalized

July 23, 1984 - Queens, N.Y.
Amtrak - Trains #151 and #168 - Collision

1 PAX fatality, 95 PAX and 11 emp. injuries of which 8 PAX and 4 emp. hospitalized

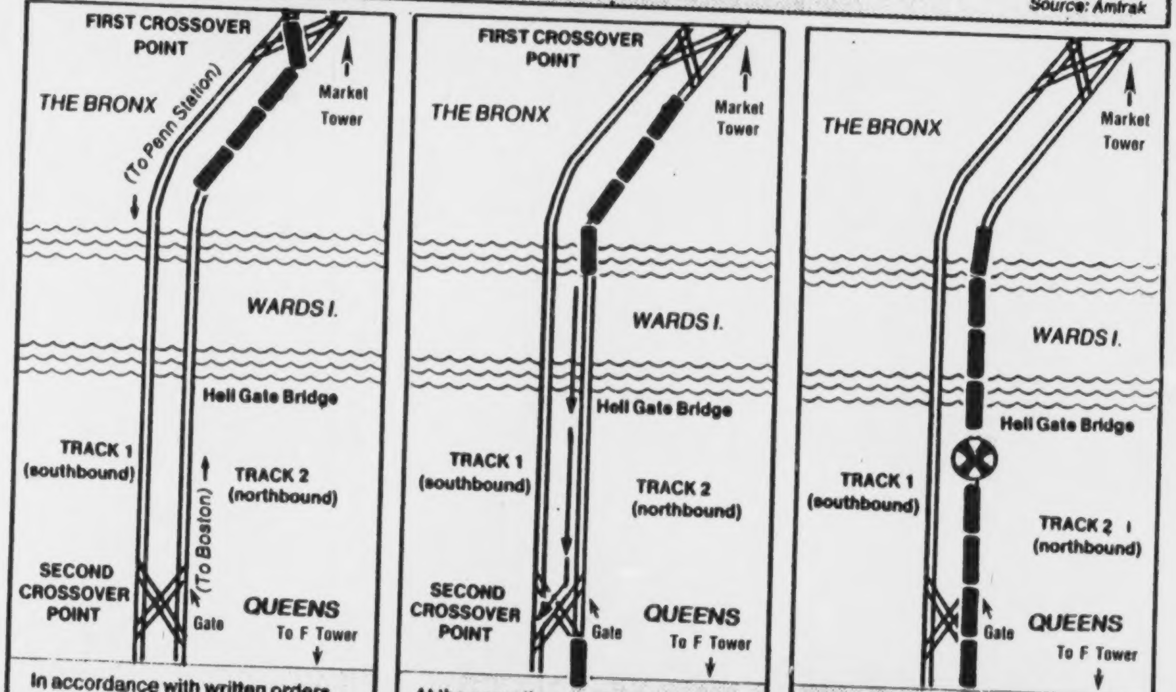
3 Minor Terminal Incidents Caused by Track Defects or Crew Failures

1 on contracting railroads
2 on Amtrak
No passenger or employee injuries

Amtrak Collision: How It Happened

(Map is schematic)

Source: Amtrak


FIRST CROSSOVER POINT
THE BRONX
(To Penn Station)
Market Tower
WARDS I.
Hell Gate Bridge
TRACK 1 (southbound)
TRACK 2 (northbound)
(To Boston)
SECOND CROSSOVER POINT
Gate
QUEENS
To F Tower

In accordance with written orders, southbound train 151 switched from Track 1 to Track 2 at first crossover point, several miles north of crash site. It was to cross back over to Track 1 south of Hell Gate Bridge.

At the same time, Train 168 out of Penn Station was moving north toward Train 151 on Track 2. It was to have stopped south of the second crossover point and to have held its position until Train 151 passed.

Instead, it continued north, colliding head-on with the southbound train on Track 2 between the two crossover points. One person was killed and at least 125 people were injured, several seriously.

The New York Times / July 24, 1984

Mr. GLICKMAN. Thank you.

In your testimony on page 3 you indicate that Amtrak did not itself have the responsibility, authority, or ability to prevent six of the last nine accidents——

Mr. CLAYTOR. Right.

Mr. GLICKMAN. Who has the legal responsibility or liability for fatalities, injuries, and other damages due to those accidents?

Mr. CLAYTOR. The operating railroad.

Mr. GLICKMAN. OK.

Now, let me move on from there. Is it true that Amtrak shields the owners of the track on which it operates from liability by paying for the cost of liability insurance?

Mr. CLAYTOR. Some of it—no, no. Let me go back. I'll have to give you the history of that.

The Amtrak statute, section 402(a), effectively requires Amtrak to contract with the railroads over whose track it runs and to pay them the rough equivalent of what they would save if they did not have to furnish services and facilities to assist the running of Amtrak trains. In other words, the concept set up by Congress is that the railroads are paid any loss, any costs, they incure because Amtrak is there.

The contracts that were negotiated back in 1972 contain a liability provision—and this was hard fought, as I understand it, long before I was here. It was a negotiated contract which, in effect, provides that Amtrak pays, in the event of a derailment or any accident, Amtrak pays all the costs of damage to its equipment and liability to its passengers. The railroad pays the cost of damage to its track or its equipment and any liability to its employees. That's the way it's set.

Mr. GLICKMAN. Is there any thought of reviewing that contractual arrangement?

Mr. CLAYTOR. Well, unfortunately, it's not within our power to make a change in that. This is a contract. We are looking, we are looking into the feasibility of interpreting the contract in such a way and going to an arbitration panel on this, if necessary, which is what the contract provides for, in the case of flagrant or gross negligence on the part of the railroads.

Mr. GLICKMAN. Let me ask you this. If you're operating on a track and you've got 600 passengers on a train, the track is defective and the train derails, that means that the passengers only point of collection would be you and not the railroads?

Mr. CLAYTOR. No; they can sue—well, they can sue the railroad and recover, but we would have to, from a—we would have to reimburse the railroad, that's right.

Mr. GLICKMAN. Indemnify the——

Mr. CLAYTOR. That's right.

Now, we have insurance covering this with fairly substantial deductibles. Our current policy stipulates $2 million deductible per occurrence, with a total of $100 million upper limit per occurrence. That's for liability. For our property damage, our own property damage, we have $2½ million deductible per occurrence with a $25 million upper limit per occurrence.

Mr. GLICKMAN. I don't know a lot about this, but it strikes me that that kind of relationship, while it may have been appropriate at the time you were all getting started, needs to be reviewed again. I think it puts a cloud on individual responsibility for accidents.

Mr. CLAYTOR. Well, let me say—I explained yesterday on this. When I was president of Southern, a wreck on our railroad was something we couldn't have, and I think every president feels that way. It doesn't matter whether it's his train or someone else's train running over his track. That is something you can't afford to have, and I think the obligation to avoid it is going to be unchanged—the motivation to avoid it is not going to be seriously affected by this.

When you look at what sort of is fairness, is fair under all the circumstances, it does frustrate me to have one of my trains wrecked by something that is totally beyond my control and solely in their control, and then it costs me 10 times as much as it costs them. I just don't like that.

Nevertheless, since the concept that Congress has set up is that the railroad is to only have to pay what—rail is to be paid what it would cost them if Amtrak wasn't there. In other words, any costs because of Amtrak's presence is to be reimbursed.

What would happen if the railroads had to pay this would be they would insure it and add the insurance to our bill. Apparently, that was looked at in the early days. If they did that, separate insurance for 13 separate railroads would probably add up to a whopping lot more than we pay for the insurance ourselves, and so you go right around the circle and end up in the same place. It's a difficult problem, Mr. Chairman. And I agree with you, and it frustrates me.

Mr. GLICKMAN. I just think it needs to be reviewed and I would hope that you do that.

Let me ask you this. Who employs the engineers on Amtrak trains operating on track not owned by Amtrak, when you're out in my part of the country operating trains?

Mr. CLAYTOR. Except in one instance, the Auto Train, they are all—the entire train crew, the conductor, the engineer, and the trainmen, are all employees of the operating railroads.

Mr. GLICKMAN. You know, one of the things that has always troubled me and now has come up with these accidents is this who's in charge here. Here you have Amtrak running the trains——

Mr. CLAYTOR. Oh, that was not true on, of course, on Amtrak's own railroads. They're our employees.

Mr. GLICKMAN. I realize that. But as a general proposition, you know, I always want to know who's in charge. Well, I want to know who's in charge of maintaining the safety of the operating passenger railroad. On most of the lines you're operating on lines operated by railroads. The engineers are employed by the railroads, and who inspects the track, primarily the railroads——

Mr. CLAYTOR. Oh, entirely.

Mr. GLICKMAN. Yeah, and——

Mr. CLAYTOR. It's their track, it's their—their trainmasters supervise the operation of the trains. Their dispatchers dispatch the train. They throw the switches and signals. They do the whole thing. This is another one of their trains, and that's——

Mr. GLICKMAN. The question is what is your role in all this, just selling tickets?

Mr. CLAYTOR. Our role is to provide the equipment. If there's anything wrong with the equipment, it is obviously our problem. We own the locomotive and the cars and we employ all of the people who serve on the train in capacities such as dining cars.

Mr. GLICKMAN. OK. Now, the question would relate to, one, who is responsible in terms of the safety of the track and roadbed; is it a joint responsibility?

Mr. CLAYTOR. No.

Mr. GLICKMAN. It's solely a railroad——

Mr. CLAYTOR. Solely a railroad responsibility.

Mr. GLICKMAN. Yeah. You don't feel any compulsion to go out and independently inspect track?

Mr. CLAYTOR. We couldn't. We could do it, but it would be useless because we could—in no way we could do the kind of track inspection that's required to make the track safe. A walking inspection or inspection in a little high rail car that goes slowly so he can look at the track, through 23,000 miles of track, it would be absolutely impossible.

Mr. GLICKMAN. OK.

Mr. CLAYTOR. I think it's a mistake to even think about that. What we've got to do is see that the railroad does his job.

Mr. GLICKMAN. OK. Well, I don't disagree with that, and that's why I was a little amused to hear the size of fines that the Federal Railroad Administration has. Again, in the aviation sense, those aren't very much of a stick at all to convince the railroads to make some changes. But that's not the subject of this hearing.

The other thing has to do with human factors again. You've got people who aren't employed by you operating the trains.

Mr. CLAYTOR. Yes, it's their train. They're operating their train and controlling their train, too.

Mr. GLICKMAN. I think this is a fact that most people, including myself and most American people, do not understand.

Mr. CLAYTOR. I agree, and I——

Mr. GLICKMAN. Amtrak is a label, but really it's the operating railroads that run the Amtrak system—I mean from an operational point of view, on a day-to-day basis.

Mr. CLAYTOR. That is why, when we have an accident such as the one in Vermont—and I get letters from ladies saying, "You must be going to hell. You're running your trains off the track. Don't you hire people who know what they're doing?" It's very frustrating. I answer that in as nice a way as I can and try to explain it.

But there isn't—I've thought about this a long time. It's a public problem. I don't think we're going to be able to do anything except live with it. I'll do everything I can to try to get, to educate the public on this.

Mr. GLICKMAN. Yeah. Now, I don't take away their responsibility when you operate trains on your own track——

Mr. CLAYTOR. Oh, no, that's our——

Mr. GLICKMAN [continuing]. As the Queens accident was. Is that correct?

Mr. CLAYTOR. Yes, that's ours entirely.

Mr. GLICKMAN. That was yours entirely.

This is a troublesome institutional relationship which may be more troublesome because we have had a series of accidents, largely involved on track that's not yours. This last one was yours.

Mr. **Claytor**. That's right. It wasn't track, though. That was—It clearly wasn't track. Whatever else it was will be determined.

Mr. **Glickman**. Yeah.

Mr. **Claytor**. It was not track or equipment.

Mr. **Glickman**. Now, your new advanced geometry cars is just going to operate again on your own track.

Mr. **Claytor**. We can use it elsewhere, but we basically—the FRA said we are required to do this I think once a week. Goodness, twice a month—once a month, once a month. We will be running that car up our track a great deal more often than that, and when we can spare it, if we have some indication of a problem, we can take it out and run it over another railroad with their permission, which they would give.

Mr. **Glickman**. Let me ask you, do you have the authority to inspect railroad track without their permission?

Mr. **Claytor**. No.

Mr. **Glickman**. What if you think there's a problem on their track?

Mr. **Claytor**. I have never had—I have never—they have never refused us permission to run one of our cars on one of our trains and check it, and I wouldn't expect they ever would.

Mr. **Glickman**. OK. My final question relates to weather stuff. You know, you have talked—for 25 years you could go down and buy one of these little radios that are plugged in with this national severe—local oriented, to give you severe weather forecasts that's updated every 20 minutes, I think, or every 30 minutes. It seems the technology is there to give you that weather information now on a local basis.

Mr. **Claytor**. The best technology for this purpose, the one I mentioned, in which there is equipment which will sound an alert, a beep. As I say, as a practical matter, putting a weather, a regular weather, continuous weather reporting system in a dispatcher's office just wouldn't work. But this will work, and they'll stop and listen and copy it down and then take action. That's the thing I think that is the most important.

Mr. **Glickman**. OK, thank you.

Mr. Carney.

Mr. **Carney**. Thank you, Mr. Chairman.

Mr. Claytor, how much track does Amtrak own?

Mr. **Claytor**. We have about 1,100 miles of track, I believe.

Mr. **Sullivan**. In the Northeast corridor we own trackage, including the side tracks, about 2,600 miles of track, and about 95 track miles out in Michigan, between Porter, IN, and Kalamazoo, MI.

Mr. **Carney**. When you manage your track mileage, if you're going from here to Philadelphia, there's two tracks?

Mr. **Claytor**. That's route miles, yes, sir. Route miles, we have 400 and some?

Mr. **Sullivan**. About 428 route miles between Washington and Boston.

Mr. **Carney**. So you own all the track between Washington and Boston?

Mr. **Claytor**. No; we wish we did. We own, we actually own the track from Washington to the New York State line north of New York, basically New Rochelle. The Connecticut Department of Transportation owns the track from New Rochelle to New Haven, and it is operated by the Metropolitan Transit Authority of New York for them. Now, our trains are entitled to run over that track, but on that, and they run with our crews. But they control the signals, dispatching, and maintenance of that track. From New Haven to Boston—well, from New Haven to the Massachusetts State line, we own the railroads. From the Massachusetts State line into Boston, it is owned by the Massachusetts Bay Transit Authority, and we have authority to run over it. Under, and the present time, we are maintaining and dispatching that line under contract for them. We are in the process of having a dispute about how much they're going to pay us for that, and it may be that they're going to take that over and do it themselves. But that's where we are.

I wish—I think it was a great mistake not to put the entire thing in Amtrak, but that was done many years ago and that's the way we end up with it.

Mr. **Carney**. You're saying, when you maintain that part of track in the State of Massachusetts, or the Commonwealth of Massachusetts, you're talking about track maintenance as well?

Mr. **Claytor**. Yes.

Mr. **Carney**. And you have your own crews out doing that?

Mr. **Claytor**. Our own crews run the trains. Our own crews are maintaining the Massachusetts track, too, but only under contract with Massachusetts Bay. They're entitled to do it themselves, and they may.

Mr. **Carney**. Going from here to Philadelphia, which I had the privilege of doing, in fact, in your car once, that track seemed to be completely fenced in and—I shouldn't say completely, but many of the miles that you passed over, it was completely fenced in. A few overpasses, as you mentioned, you're eliminating the last two here. But you have concern about having railroad freight cars going over that track?

Mr. **Claytor**. Well, I wouldn't say concern. I'm unhappy with it because the heavy railroad freight, particularly going through the switches, tends to move the track enough out of line, because it is so heavy, that it tends to make the ride rough until we go in and smooth it up again. That's a very difficult maintenance problem.

I also just don't like to have freight trains mixed with these passenger trains because if one of those freight trains derails from a broken wheel or something on a box car, it could cause no end to troubles. I'd like to see it off, and it could be, but this is a very complicated and difficult thing involving other railroads, the Federal Government, Conrail, and everyone else, and all I can do is to say in the best of all possible worlds from here to New York ought to be exclusively passenger, except for pick up and delivery of local freight in industries that are right alongside the track, which wouldn't bother us.

Mr. **Carney**. Do you have other rails that they could use from——

Mr. CLAYTOR. Oh, yes. I don't have it. They're there. The Chessie system has parallel tracks to Philadelphia and Conrail from a number of earlier railroads has plenty of tracks from there to New York.

Mr. CARNEY. OK. Can we focus on the New York accident now?

Mr. CLAYTOR. Yes.

Mr. CARNEY. The employees of Amtrak were driving Amtrak equipment on Amtrak tracks, and those in control of the track were Amtrak employees?

Mr. CLAYTOR. Absolutely. That's true of the entire—most of the corridor. Certainly that section.

Mr. CARNEY. I was reading newspaper reports and I am trying to be very careful. I know there's questions we would like to have answers to, but it would be inappropriate to even ask questions about the incident at this time while an investigation is going on, so I'll try not to do that. But I was just curious. In an incident involving one employee of Amtrak, you were able to get a urine sample, and then later on a blood sample.

Is that a requirement of employment that you have to——

Mr. CLAYTOR. No; what we did was to ask for urine and blood samples from the three people in control; that is, two of the tower operators and the dispatcher. They voluntarily agreed to do it. They gave us permission to do it.

Under Mr. Riley's proposed regulations, I think we would be able to—we could mandate doing it in the event of an accident. But we didn't have to. They gave permission.

We also got permission and got blood from the two engineers, but they were in the hospital and there was considerable difficulty in arranging that. One of the problems we always have in this is someone is injured in the hospital and we want to get blood samples to check alcohol content. The hospital says, "Oh, he's unconscious; I can't do it without a court order" and you have a great deal to do about that. We did get blood finally, although one sample of the blood was contaminated by the hospital and couldn't be used and they had to get another sample, and we still haven't gotten the results on that.

Mr. CARNEY. But that was all done voluntarily, is the point I was trying to bring out?

Mr. CLAYTOR. Yes.

But under the new regulations that are pending, as I understand it, it could be required in the event of any accident or any evidence that there might be a problem.

Mr. CARNEY. One of the people involved in that accident claimed that he had asked for additional training and was refused. Could you comment on that?

Mr. CLAYTOR. I don't—I do not think that is correct. He—The information we have is that he had been qualified on that tower, and he had been on the payroll for 10 years, I guess. He had been qualified on that tower. He had been given—because there had been some changes, the signal that was involved here had only been installed in June, and after that was done, he was given 7 hours of training on the installation of the new signal. He had already had fully qualified on the tower apart from that.

At the end of that he was asked if he felt satisfied, and he said yes; he did. He had no more problems. That we know. We have that from the man who did the training.

In addition, during the 2 or 3 weeks between that and the time of the accident, he had handled this precise problem of running a train down the track the wrong way because the other track was out of service, twice, and handled it properly. He—I don't think there was any question about that.

And I saw the press report, and I investigated immediately and am satisifed it's wrong. He may have told somebody that now, but he certainly never said that up to the time of the accident.

Mr. CARNEY. Let me ask you a question. In your testimony you indicated that Amtrak does a lot of work in the area of rolling stock safety, design, and that type of thing. And you also alluded to the fact that oftimes an awful lot is learned from accidents and tragedies——

Mr. CLAYTOR. That's not just Amtrak. That's the history of railroading.

Mr. CARNEY. And that's also the history of traumatic medicine; that's how we learn—we probably learned more from the Korean war in that area than anything else.

Mr. CLAYTOR. Yes, sir.

Mr. CARNEY. It's an unfortuante side of life, but it's a fact.

Would you say, gauging—and I know you have not had time to look at these most recent accidents, but the derailment, the head-on collision, where great trauma has been put on these vehicles, that they have stood up fairly well, that those accidents had occurred, let's say, 20 years ago, the fatalities might have been higher?

Mr. CLAYTOR. Yes. I would like to ask my chief mechanical officer, Mr. Crawford, who's in charge of that to talk about the structural capability of our equipment now. This equipment is all brand-new, in effect.

Mr. CRAWFORD. Yes. The Amfleet equipment and the locomotives involved in that head-on collision withstood the collision tremendously, and there would have been an increase in injuries if the equipment wasn't of modern nature and wouldn't—the whole complete car withheld the structure and the collision shock. As a matter of fact, the compression took place in the vestibule end of each car. From the vestibule back into the passenger compartment, there was no disruption or crushing of the car structure.

Mr. CARNEY. Also, too, the accident occurred in a very difficult place to respond with emergency equipment and that, and it seemed to me, from reports that I have read and in looking at some newspaper photos and some footage on television that we were very fortunate that people got out of there as quickly as they did and as safe as they did.

Would you care to comment on the reaction of emergency crews and of Amtrak employees from the point after the head-on collision?

Mr. CLAYTOR. Mr. Carney, I would like to comment on that.

We, several years ago, instituted a systemwide training program for accidents of every kind. We include in that training program not only all of our employees who are onboard, but we went around the country training the trainmen who work for the railroads, who run these trains. We included in the training programs in each area as many as would come of the local rescue squads and fire departments. We have a system—we have certain windows that can be opened, there's a way to open them if you need to get in the car through windows and that sort of thing. These people are not only shown this, but they are trained on a mockup of a wreck in which they are told "get in there now and get in that car that's on its side or whatever." And they learn how to do it. This has been a tremendously successful program, and it paid off not only in this accident but particularly in the accident in Vermont.

The president of the Central Vermont Railroad yesterday in his testimony stated that his company had joined with Amtrak in conducting this training and that he considered that lives were saved and many injured people assisted before their injuries got worse because everyone knew what to do and they had been trained in doing it, his people as well as ours. I think that's true.

We have continued that training. It isn't just a one-time thing. We have refresher training every year and we're going to keep that up.

Mr. CARNEY. Well, I thank you very much, Mr. Claytor, and I know that you've been very busy for the last couple of weeks and busy in an area that I think you would rather not be busy in. But I think you recognize that we have a responsibility too, and we appreciate your frankness and the way you have responded to us, and we appreciate the fact that you have done it in a timeframe where your calendar has to be completely jammed.

Mr. CLAYTOR. That's all right, sir. I am happy to be able to do this, and I want to cooperate with this and every other committee in any way I can. I'm available on very short notice for anything you all want, and if you have any further questions after the hearing is closed, we'll be glad to run them down for you.

Mr. GLICKMAN. Can you restore the Lone Star from Kansas down to Texas? [Laughter.]

Mr. CARNEY. I'll yield back.

Mr. CLAYTOR. This is purely a question of money and what——

Mr. GLICKMAN. I'm just kidding, Mr. Claytor. You don't need to talk about this. I'm not kidding but we don't need to talk about it now.

Mr. McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman.

Mr. Claytor's statements have been very complete and covered the concerns that I had in his statements, and I have no questions at this time.

Mr. GLICKMAN. We thank you.

Mr. Claytor, we thank you for coming down here today.

Mr. CLAYTOR. Thank you, Mr. Chairman.

Mr. GLICKMAN. Our next witness is Mr. Jim Snyder, a friend of ours who has been before this committee before, the national legislative director of the United Transportation Union.

I would tell the witnesses, just for everybody's benefit, that the first three witnesses went longer. I expected them to go longer. This hearing needs to adjourn by 1:30 today, so that should give everybody enough time, I think. But those of you who want to summarize, that's fine. We just need to be out of here by about 1:30.

Mr. Snyder, it's a pleasure to have you here again today, and we appreciate the input that you give us on a variety of railroad issues. It's very valuable to us.

STATEMENT OF JAMES R. SNYDER, NATIONAL LEGISLATIVE DIRECTOR, UNITED TRANSPORTATION UNION, ACCOMPANIED BY LAWRENCE M. MANN, COUNSEL, RAILWAY LABOR EXECUTIVES' ASSOCIATION

Mr. SNYDER. Thank you, Mr. Chairman, members of the committee. We appreciate the invitation to appear here today.

I'm not only appearing on behalf of the United Transportation Union; I am appearing on behalf of all the railroad brotherhoods that are members of the Railway Labor Executives' Association. I am also privileged to have with me Mr. Larry Mann, who is the counsel for the Railway Labor Executives' Association and who has been on this ever since 1970 since the enactment of the legislation, the Rail Safety Act of 1970.

In order to comply with your request, I will briefly as possible, since we have so many important issues here, to elaborate on these and read part of my statement as I go along.

First of all, I would like to say that the employees that we represent, there's no question about it, I think that railroad passenger train service is one of the most safest places we have, forms of transportation we have in this country. We are pleased to work with the Congress over the years, and every time they come up for authorization have played a major, major role, along with the Congress, to make sure we have a good, adequate passenger train service in this country.

It doesn't take a crystal ball to understand what is wrong in railroad safety. For the past 2 years, railroad labor has warned everyone who would listen that the current situation was going to occur sooner or later. At the present rate of accidents, injuries, and deaths, 1984 will be the worst railroad safety year since the—what the rail labor and FRA is doing since 1970.

I would like to say this. They have painted a very good picture here, the previous witness has, to the safety record of the American railroads. Well, let's look at this from our standpoint, Mr. Chairman. I think you elaborated on it just briefly there. We have a lot less mileage. We have 14,000 miles in the Northeast here less miles on Conrail today. Prior to that time we had a very bad accident rate up there. Even an engine standing still would derail and that type of thing. Out in your part of the country, that's right. Out in your part of the country, off of the Rock Island Railroad, there's only a small segment of that railroad operating today. We had the same thing out there. Deferred maintenance and all the railroads have run down, and it just really could—So we had a high accident injury rate. Same thing with the Milwaukee Railroad. So here which is half in two now.

Also let's look at the Staggers Act, which we supported and which we are very much concerned with now because of a lot of abandonments across the country here. Now, these are branch line abandonments. A lot of them we don't agree with, but primarily branch line abandonments. You don't go by ton mileage and things like that. They have a lot of accidents because lack of men, because of lack of travel on these branch lines, and so on. So when you put all these together, put all these together, sure, we can make a good record out, so the record is not complete there, it's not as good as you might lead you to believe there because with all these factors taken out of the picture there, although we are constantly working with the FRA and constantly working with everyone to try to improve these.

There is pending before the House of Representatives, H.R. 5585, which in our opinion deals effectively with some of the major safety ills of the rail safety industry. We urge its prompt passage so that safety can be given the attention deserved by the public and the workers.

I would like to just briefly elaborate on that. We testified earlier on 5585. It came out a reasonably good bill, out of the committee by 20 votes to 2 opposed to it, out of the committee. It's pending before the Rules Committee. Most of the issues, just about all the issues that we recommended, the FRA and railroads opposed them, and on just two or three I would like to elaborate.

The crossings, the crossings. We had recommended an amendment to the Rail Safety Act because we had been unable, unable to get the FRA to move since 1976 on regulations, standard rules and regulations that govern highway crossings, highway crossings. We made every effort to get this. There is no Federal regulations that govern highway crossings. Only one-third of the railroad crossings today are protected by electrical devices, signals, and gates. So two-thirds of them you have with just a little crossboard. A lot of times these are not really visible to the public, and we have so many blind crossings.

So that we had asked for an amendment that the FRA go into rulemaking, go into rulemaking with 180 days so all parties could be heard and all, and to update and to come out with some reasonable rules and regulations that govern the signal, maintenance and all of the crossings and all. They opposed this. However, the House did accept—it's in the 5585. The Senate did not. The Senate only provided for another study. Well, it's been studied since 1976 as far as we're concerned. It's time for action now.

Also in 5585 there's a very important thing in there, the harassment thing, where employees report these alleged violations, violations in everyday operations of the trains and all. Then they're being harassed and all, threatened with their jobs if they make these reports and all. This is in both of the bills. It is now moving on the safety bill. This is very important, so that the proper—that the employee wouldn't be scared, so scared of his job and all, if he couldn't report his management—if he report to the agency in case of unsafe conditions and not corrected and all. This is—also, there's a provision in which we worked very hard in there to have qualified employees, qualified employees be required to make inspections of trains out here before they leave the trade, terminal, and this would be for freight, all kinds of freight movements and all before they leave the terminal.

We, at the request—we, at the request of the FRA, at the request, sit down with the railroads—and I chaired this committee on the Power Brakes Act of 1959 and worked out what we call good reasonable standards here, to correct—I mean to bring it up to date, to assist the railroads in more competitive business, in which it has and all. However, we have been very disappointed. Even though it was all in good faith with the top officials of the railroads, we set down with the committee and we set down with here, they have just about destroyed in a lot of cases the qualified carmen that makes the inspections of these trains before they leave the terminal. This is something we're concerned with. We asked that this be looked at by the FRA in rulemaking, the eligibility and the qualification of employees. This was rejected they testified in opposition to this proposed. However, I'm pleased that the House looked at it and it has a much better provision in 5585 in this direction.

Now, I could go on, but I think these are two of the most important amendments in there, in the House bill, which will be debated on the floor of the House. Certainly we appreciate you and your committee over the years and all, because you have always been interested in safety and all. You always have come up with some very good ideas on rail safety and it is certainly our pleasure to always to sit down and work with you and your committee on these things. We're hoping that maybe even a little bit further tuning up on the safety bill in the House they will correct a lot, particularly in the crossing issue areas here and these type of things.

I think it is safe to say that rail labor has been the most vocal critic of rail safety problems on the Nation's railroads. Of course, it is appropriate that we be the watchdog. It is our members who are being killed and injured by the failure of the railroads to comply with the safety laws. The problems are compounded by the failure of the FRA to enforce those laws. The point is that the carriers no longer have an incentive to comply with the laws.

Now let me just elaborate on that just briefly, Mr. Chairman. In 1982 the FRA put in the so-called safety system plan which we objected to vigorously, because I pointed out it was not going to work and it hasn't worked, and the reason it hasn't worked—according to our records, we supplied the Commerce Committee on Rail Safety Authorization, to give you a good example, which is in my testimony, 300,000 citations by the FRA inspectors themselves of all aspects of violations of regulations, safety laws, was reported to the Washington office. Only 15,000 of those was cited for violations, only 15,000 out of 300,000. Now, these are the FRA inspectors out in the field——

Mr. GLICKMAN. Why is that? Do you think it's because they're too easy on the railroads, or do you think there's not enough staff at the FRA?

Mr. SNYDER. Well, I think—I think two or three reasons. First of all, we don't have a sufficient number of inspectors. We asked for 30 more inspectors here, just being reasonable with the budget, trying to go along with the budget which was reasonable. This has been rejected. This has been—the present inspectors out there have the largest territory to cover now. They can't—with the rules and regulations that they're charged with, they can't cover it. There's no way—we can furnish you all types of figures in that respect. So the territory is too large to really do a good job, to do a respectable job on this. So we think in all fairness to the inspectors out there, they may do a good job. They do a good job, but there's just not enough of them out there to do a good job.

Now, another reason, the main reason which I get into the systems safety, the policy that the FRA is following there, which is old policy—we told them it wouldn't work because the policy is there to, after a citation, after FRA inspectors, a citation has been called to their attention, go to the railroad or send to the railroad a notice and all to get it corrected. Well, that sounds real good. If they don't correct it, the second time they're going to fine them. Our records show they don't get back the second time. The railroads know in most cases they're not going to get back the second time. You don't have forces to get back the second time. But in order—The main reason we knew this, our people instructed, the UTU people, the other organizations that represent, before they sent any violation to our offices and all, I'd say 95 percent of them, they're going to the department management and ask them to correct it. This is where it should be corrected. This is where it should be corrected, in the local. It don't belong up here. These are cases where—and our people, they do not send them to—they do not send them to me unless they have asked it. In most every file you'll see where they have asked the railroads to correct these——

[The prepared statement of Mr. Snyder follows:]

JULY 27, 1984

TESTIMONY OF J. R. SNYDER
RAILWAY LABOR EXECUTIVES' ASSOCIATION

BEFORE THE HOUSE SUBCOMMITTEE ON TRANSPORTATION, AVIATION, AND MATERIALS OF THE COMMITTEE ON SCIENCE AND TECHNOLOGY OVERSIGHT HEARING ON RAIL SAFETY

My name is J. R. Snyder. I am the National Legislative Director of the United Transportation Union. I am appearing today as Chairman of the Safety Committee of the Railway Labor Executives' Association. Accompanying me is Lawrence M. Mann, attorney for RLEA in this matter. The RLEA represents all the crafts of the railroad workers in this country, and the names of the constituent organizations are as follows:

American Railway Supervisors Assn.
American Train Dispatchers Assn.
Brotherhood of Locomotive Engineers
Brotherhood of Maintenance of Way Employes
Brotherhood of Railroad Signalmen
Brotherhood of Railway Carmen of the United States and Canada
Brotherhood of Railway, Airline and Steamship Clerks
Hotel Employees & Restaurant Employees International Union
International Association of Machinists and Aerospace Workers
International Brotherhood of Boilermakers and Blacksmiths
International Brotherhood of Electrical Workers
International Brotherhood of Firemen & Oilers
International Longshoremen's Association
National Marine Engineers' Beneficial Association
Railroad Yardmasters of America
Sheet Metal Workers' International Association
Seafarers International Union of North America
Transport Workers Union of America
United Transportation Union

It doesn't take a crystal ball to understand what is wrong in railroad safety. For the past two years rail labor has warned everyone who would listen that the current situation was going to occur sooner or later. At the present rate of accidents, injuries, and deaths 1984 will be the worst railroad safety year since the enactment of the Federal Railroad Safety Act of 1970. Since it is obvious to rail labor that FRA is not going to demand strict compliance by the railroads with the safety statutes and regulations, Congress and the courts must fill the void. There is pending before the House H.R. 5585 which in our opinion deals effectively with some of the major safety ills in the rail industry. We urge its prompt passage so that safety can be given the attention deserved by the public and the workers.

I think it is safe to say that rail labor has been the most vocal critic of rail safety problems on the nation's railroads. Of course, it is appropriate that we be the watch dog. It is our members who are being killed and injured by the failure of the railroads to comply with the safety laws. The problems are compounded by the failure of the FRA to enforce those laws. The point is that the carriers no longer have an incentive to comply with the laws.

The FRA in 1982 initiated a plan whereby safety violations discovered by its inspectors would not be subject to citations and penalties. Rather, the FRA now permits a defect to exist until such time as the railroad corrects it. Only if the defect is not corrected within a time set by the inspector will FRA consider that to be a penalty. Thus, the carrier simply waits until the FRA inspector happens to discover a defect, and then makes the repairs. Moreover, the FRA inspectors are spread so thinly throughout the country, it is virtually impossible for them to follow-up on defects for many weeks. With respect to defects found on cars and locomotives there cannot be follow-ups.

The results of this new enforcement policy is demonstrated by FRA's failure to impose fines. For example, in that year there were approximately 300,000 defects discovered by FRA's inspectors which were forwarded to Washington for enforcement. However, in only about 15,000 cases did FRA seek to impose a fine. In our judgment the FRA is simply "cow towing" to the railroads. The Burlington Northern for example hasn't paid a fine for violations in 3 years. The RLEA filed a lawsuit in an attempt to require the FRA to impose fines for all violations. The FRA has argued to the court that we did not have standing to bring the lawsuit, but that we were merely by-standers and have no right to require FRA to enforce the safety laws. The point is if railroad workers who are exposed to injury and death daily cannot bring such an action, then no one can. The workers are the primary victims of the failure of the FRA to enforce, as evidenced by the fact approximately 10% of the workers each year are injured.

Your Committee will be provided statistics by other witnesses attempting to demonstrate to you that rail safety is improving. We urge you to carefully analyze these figures by keeping the following points in mind:

1. The statistics do not reflect the reduction in employment during the last few years of more than 30%, and the discontinuance of many trains.

2. The fatalities to railroad employees have continued to rise even with the loss of employment.
3. The railroads alone provide the FRA with the statistics. That is, the railroads determine which accidents are to be reported and tell FRA what caused the accident or incident.
4. The monetary threshold for reporting an accident was increased last year to $4500 and the comparison between the prior years are not necessarily valid.
5. Where statistics are related to man hours worked, such figures should be adjusted to compare only the operating crafts and not include office personnel. Including all crafts will distort the actual casualty rates of those who are really exposed to injuries.

Much attention has been directed to the use of alcohol and drugs on the railroads. This is one of the most difficult areas of rail safety to address. Studies have demonstrated that there are only a few workers under the influence of alcohol or drugs when they are working. Nevertheless, the problem is significant enough that all interested parties are making a determined effort to improve the existing methods of dealing with abusers. There are no easy answers, but we feel that the emergence of employee assistance programs throughout the industry are proving to be very effective in the detection and treatment of alcohol and drug abusers. The Federal Railroad Administration has now issued a Notice of Proposed Rulemaking and hearings are currently under way to deal with this problem. It is anticipated that the FRA will issue a final rule during this year.

As you know there has been a rash of accidents recently. In the Spring of this year I testified before several Congressional Committees that the conditions on the railroads will soon result in more and more injuries and deaths. Our members tell us that the equipment is deteriorating, and that there is little inspection being conducted as required by the federal laws. The railroads have begun a nationwide policy of requiring train crews (as opposed to qualified car inspectors) to inspect the trains. The train crews have not been given adequate training nor are they instructed on the full responsibilities and requirements of the federal laws.

Carmen, on the other hand, are recognized as being qualified to perform the tests and inspections and have been given rigorous training by the carriers before being allowed to perform the tests and inspections. This is happening because the FRA will not require strict compliance with the regulations that mandate detailed tests and inspections at initial terminals. The result is that trains regularly leave terminals with little or no inspection, which contain many defective cars.

We recognize that this hearing is devoted primarily to track safety. However, we feel that it is important that your Subcommittee be aware of the gravity of the overall safety picture. It is becoming as bad as it has ever been.

First of all I will present some background on track safety. Train accidents caused by track defects have been decreasing in the last 10 years, but it is still the largest cause of accidents on the railroads. Last year was the lowest in many years. Nevertheless, in 1983 there were 1,581 accidents caused by track defects which was 2.83 accidents per million train miles. When compared with any other cause of accidents such as equipment failures or human factors, track continues to be the highest rate per million train miles.

Accidents on main line track and yard track are about evenly divided. In 1983, 700 track caused accidents happened on main track, and 722 on yard track. Damage to equipment and track only from track defects totalled over $83 million dollars. It is interesting that only $664,500 was collected by FRA in FY1983 for track violations out of potential fines of $1,235,000. You must keep in mind that these violation reports were submitted only after the railroads were given an opportunity to correct the violations and didn't. Moreover, these violations do not even scratch the surface of all the violations that actually exist. The answer to the problem is simple. Until the FRA makes up its mind to enforce the track safety standards, these figures are not going to reach an acceptable level.

Now I would like to direct your attention to some of the recent Amtrak accidents, which in our view could have been prevented by proper rules, regulations and enforcement. On July 7th an Amtrak train derailed in northwestern Vermont killing 5 persons and injuring approximately 148 other passengers. The train derailed while crossing a rain-swollen creek. Aside from the poor judgment of the railroad to gather up-to-date weather data, there are no federal regulations governing the inspection and maintenance of bridges. Over 10 years ago, the RLEA requested the FRA to impose standards over bridges. The point here is that the accident in Vermont was preventable if adequate bridge standards had been adopted by FRA.

Two Amtrak accidents this month occurred at crossings in South Carolina. On July 6 at Elgin, South Carolina a train-truck collision killed two persons in a pickup truck. It has not been determined why the truck was on the tracks. On July 11, 1984, another Amtrak train was involved in a catastrophic accident at McBee, S.C. There, the train collided with a diesel tank truck killing 2 men and dragged 14 cars filled with alarmed passengers through the blaze which resulted. The flames cracked windows and poured smoke and heat into passenger cars. Three hundred and nine passengers were aboard the train, but fortunately only a few were injured. It may shock you to learn that there are absolutely no federal regulations governing grade crossings. Since 1976 the rail workers have attempted to persuade FRA to impose standards for grade crossings.

The McBee, South Carolina accident highlights the enormous amount of hazardous materials that are carried each day by both rail and truck. There are approximately 45,000 different types of hazardous materials shipped in the U.S. alone on rails, barges, trucks and airplanes. Only about one-third of the public grade crossings have active devices such as bells, lights or gates. The overwhelming majority of crossings are marked only with a cross-buck sign, such as the crossing at McBee, S.C. and Elgin, South Carolina. The Department of Transportation has pointed out that if 15,000 crossings were provided with improved protections, accident costs would be reduced nearly 3 times that of the installation and maintenance costs of the improvement. Congress has obligated $1.3 billion dollars for the construction of highway grade crossing devices. In Fy 1983, $346 million dollars in federal highway funds were allocated for the crossings. Although, none of these funds have been used for maintenance purposes.

On Monday of this week two Amtrak passenger trains going across a trestle collided head-on, killing one person and injuring approximately 137 of the total of over 300 passengers. Ten of the 12 cars on the two trains derailed. Several aspects of this collision stand out. The signal equipment was 50 years old but preliminary tests do not indicate that it was defective. We do not know what may have caused the accident other than what we have read in the press. A collision between two Burlington Northern trains on June 14 at Minnesota resulted because a train dispatcher had not been properly trained. He was on the job his second night and had very little exposure to actual train operations prior to that job before the accident happened.

Finally, two of the latest Amtrak accidents demonstrate that the interior of the Amtrak trains are not safe. In the Vermont and New York accidents, the seats tore loose causing injuries to some passengers. Also the head pads of some of the seats were broken off. In May 1984, RLEA made recommendations to improve the seating problems and other necessary standards for passenger equipment in the FRA Docket No. RSSI-84-1. I will not take the Committee's time to analyze each recommendation. Rather, I am attaching RLEA's testimony to my statement for your review.

I think it is fair to say that rail safety is in a mess and it will only get worse unless the DOT starts to take strong action to enforce the existing laws and regulations, and to impose valid standards in other areas where they are needed.

Mr. **Glickman**. If I may, let me get a couple of questions to you because we're kind of rushed for time.

Mr. **Snyder**. Yeah, all right.

Mr. **Glickman**. I want to know, isn't it a fact that an overwhelming majority of fatalities involve railroad employees; is that a true statement in terms of fatalities in the——

Mr. **Snyder**. Yes, yes, that's right.

Mr. **Glickman**. How has the railroad employee fatality rate gone the last couple of years? Has it stabilized, gone down? Do you have any—as well as injuries?

Mr. **Snyder**. It's about the same, it's about the same. Just about the same, yes, sir, Mr. Chairman.

Mr. **Glickman**. Because I know it was going up rather dramatically for several years. I just wondered, in the last—since the Staggers Act has passed, is there any correlation between numbers of people hurt or killed in the railroad industry?

Mr. **Snyder**. A slight drop, but really no, other than the branch lines, the sixties and on up, the Staggers Act being, I think that's the only relationship we can contribute to the Staggers Act.

Mr. **Glickman**. We have heard a lot about the issue of, since Staggers, about the railroads putting a lot of additional money into their capital rolling stock, track. I wonder if you might comment on that. Have you seen that?

Mr. **Snyder**. Well, I'm not expert in the finances. I'm sure they've improved it somewhat. They got more dollars to do it. And that was one of the main reasons we supported the Staggers Act there, to get as much of it off the highway and put it on the rails.

Mr. **Glickman**. Now, one final thing I would like to ask you. I personally have some concerns about apparently provisions in collective bargaining agreements that have to do with FRA inspectors going to work to the FRA, being employed by the railroads, keeping their seniority rights with those same railroads, perhaps inspecting the track owned by the railroad to which they were previously employed, and then going back.

I wonder if you might comment on that.

Mr. **Snyder**. Oh, I'd be glad to, Mr. Chairman. I know this concerns you very much. But actually, we have no problem with that, really no problem. I have no problem with that, and the reason I say that is simply because of the incentive there. The incentive I think would be otherwise. If they didn't retain their seniority, it would be right the reverse. In other words, if they couldn't remain, keep their seniority, and some day go back to the railroads, the chances are they'll never go back to their railroads. But if they didn't have the seniority, then the incentive might be, because they might be dismissed or something from the FRA to keep that railroad happy so they could go back and get their old job. So we find maybe it works the other way.

Mr. **Glickman**. Well, my question is, what about their independence? Do you think it jeopardizes their independence knowing that they're inspecting perhaps track owned by a railroad that they may go back and work for?

Mr. **Snyder**. It could. It could, but we really haven't had that—too much of a problem with it, because I ride herd over these inspectors, because I come up here to get their money for them and our people out there, if they don't operate like they should out in the field, and cooperate out in the field on these safety matters, I just let them know immediately. We got, with that exception, we got a bad case in the Northwest up there, a director that we asked to be fired. He was to be fired there by Mr. Blanchette. He's still over there, and with that exception we get along pretty well as far as the present inspectors.

Mr. GLICKMAN. The final question I have is on the issue of training. One of the things that Mr. Riley talked about was human factors in railroad accidents, and as Mr. Carney said, there is often this tendency to say, you know, pilot error or this person was drunk at the time.

But do you think there needs to be more research and work done on the issue of training? I mean, do you think perhaps we have neglected the kinds of very concentrated training that they do in the airline industry, for example, that we maybe ought to be doing in the railroad industry as well?

Mr. SNYDER. Definitely, definitely. And it should be improved, no question about it, it should be. I was very alarmed this morning, after sitting all yesterday afternoon over on the Senate side, to see the Washington Post here and Mr. Riley—I guess you saw this—very alarmed to see that. Because they bring out the fact that drugs and alcohol and drugs, which we don't tolerate. We are working with all concerned to try to correct it. I see way down in here the little lady from NTSB, Ms. Goldman, she points out——

Mr. GLICKMAN. She's more than a little lady, I want to tell you. I wouldn't mind her chairing my subcommittee's efforts.

Mr. SNYDER. Well, she pointed out—she was buried in here and her picture wasn't here, about the training. The gentleman we understand was on the Board 5 days. Mr. Claytor elaborated on this.

Now, we've haven't got all the facts. What we read in the media, in the newspaper this morning, and Mr. Claytor's testimony here. But we just had a bad accident out in Minnesota, two freight trains got together and burnt up two engines out there, a head-on collision. The dispatcher had been on the job 2 days, just 2 days. So we have here a lack of training. This is what I'm saying with the inspection of the trains here. It's going to get worse. Under the policy the railroads are following today, unless you get good, qualified people. A carman out there, it takes 4 years of being an apprentice. They're trying to get our people to do this work and we have no training in this area. And we're having to do it. We're required to do it, and then handle it through the collective bargaining issue. But I think we've got to have some more standards there in the training, in the training where he's a dispatcher, where he's a signalman, where he's—whatever he might be out there, because you can't go—you can never go wrong with the proper training and all. It always pays off dividends to the railroad. It can save a lot of money in preventing a lot of these accidents.

Mr. GLICKMAN. Sure.

Mr. Carney.

Mr. CARNEY. Thank you.

Mr. Snyder, you say in your testimony the railroads alone provide the FRA with statistics, but isn't it true that they have to—

the railroads have to file, follow very tight guidelines on those statistics? Otherwise they would be in violation of the law.

Mr. **Snyder**. That's a very, very pertinent question and I'm going to let Mr. Mann here, who handles all these statistics, elaborate on it.

Mr. **Mann**. Mr. Carney, as a practical matter, the FRA doesn't have the staff to review each accident. They look at a very limited number of accidents, so they almost entirely rely on what the railroad tells them as to the causation. That form, if you ever have a chance to look at it, will not be very informative to you, I suggest, because it doesn't show you very much. There are numbers on this sheet of paper, and then you have to look at another booklet which describes by number what this category cause is.

The FRA is simply a catalog depository. They assimilate the information nationwide, but they don't really have the staff to follow up.

Mr. **Carney**. That's an entirely different problem and I would agree with you on that and that should be carefully looked at. But in the testimony is says that the railroads alone provide the FRA with the statistics, period. I agree with that. That is, the railroads determine which accidents are to be reported and tell the FRA what caused the accident or incident.

Mr. **Mann**. That's correct. Based on certain guidelines, the railroad alone makes the determination what caused the accident. That's why you have so many, frankly, so many human error accidents. The railroad attributes it to human error.

Mr. **Carney**. But they must follow the guidelines which take into account costs of an accident, damage costs——

Mr. **Mann**. Yes.

Mr. **Carney** [continuing]. Injuries, sickness, and death, right?

Mr. **Mann**. Correct.

Mr. **Carney**. So how could the railroad, under those parameters, disguise accidents that are occurring?

Mr. **Mann**. It's a question of the cause of the accidents, not the numbers. What caused them is our problem and that's the only way you can get at what causes an accident and how to prevent them.

Mr. **Carney**. Fine. I'm glad you're fleshing that out. That's not what the statement says. The statement says that the railroads determine which accidents that are to be reported.

Mr. **Mann**. Well, for example——

Mr. **Carney**. It seems to me that the statement indicates that they can just, on their own, make a determination "I will report this one" or "I won't report that one."

Mr. **Mann**. Well, I can give you some——

Mr. **Carney**. Now I see what you're trying to bring out.

Mr. **Mann**. Well, I can give you some specifics, Mr. Chairman. No. 1, there's a $4500 threshold for equipment damage, whether or not they will report it or not report it. Well, as Ms. Goldman pointed out, that's probably the depreciated value they look at, not the actual replacement cost of that equipment that's damaged. So there are a number of areas where there is some subjective determination made by the carrier.

However, if there is an injury, an actual injury which requires medical treatment, yes. But there are situations where a man is hurt, the railroad will keep him on duty in a room, pay his full salary, so he will not mark off, so it will not be considered an injury statistic. That's happening throughout the country.

Mr. SNYDER. All over the country.

Mr. CARNEY. That's interesting. I think everyone recognizes, when you deal with statistics, it becomes rather difficult. You know, in the testimony it says fatalities to railroad employees have continued to rise even with the loss of employment. I would assume that what you're talking about is the percentage of railroad fatalities to the percentage of employees.

Mr. MANN. That's correct, Mr. Carney. As far as injuries go, approximately 10 percent of the work force is injured each year.

Mr. CARNEY. How much has the railroad work force diminished since 1979?

Mr. SNYDER. Under the present administration—it was all brought out on the House floor on railroad retirement and all—we have had a 25-percent reduction. This is one of the reasons—the 25-percent reduction in the last three—since 1981.

Mr. CARNEY. Is that the product of the Staggers deregulation bill?

Mr. SNYDER. No. The Staggers, I believe, went in in 1982.

Mr. CARNEY. No, the Staggers went in in 1979.

Mr. SNYDER. Well, 1979 I mean.

Mr. CARNEY. That allowed for the abandonment of certain—is that what was the causative effect of this?

Mr. SNYDER. Oh, some, sure, some. But since 1981, when we passed the railroad retirement act here, based on the number of employees, and about 1½ years later we had a 25-percent reduction in railroad employees. Today it's running around, overall, it's running around 15 percent, 18 percent.

Mr. CARNEY. So if I may make a summary of what you're saying, one of the areas of great concern to you and to other organizations dealing with labor is the training aspects of the railroad industry, that they should be improved?

Mr. SNYDER. Definitely, definitely improved. We had to be competitive, sure. We always work with the railroads on those, those type of things.

Mr. CARNEY. OK, so that's one area.

Now, another area, we're talking about the standards, track standards, safety standards.

Mr. SNYDER. Yes.

Mr. CARNEY. In testimony before the committee it was noted that those standards, the changes that were made in 1982 were a result of collective-bargaining agreements and agreements made between labor and management. Are you satisfied with those changes that were made in 1982?

Mr. SNYDER. No, no, we're not satisfied with them. I would like to say this—I'm glad you mentioned it. I was going to mention it just briefly anyway.

I did not chair this committee on the track standards. However, Mr. Mann here was there, also. But I do know this. In setting up what would be looked at, it would be the Power Brake Act, which I have already elaborated on, the agreement which is not being carried out, and the track standards. That was one of them. We was told in no uncertain terms that if we didn't work out an agreement here, by the FRA Administrator at that time, we was told in no certain terms if we didn't work out an agreement they was going to put in the AAR's recommendations. So some of these concessions was made with a club over our heads. It's as simple as that.

We do not agree with all of them, no. We do not agree—we stand ready to improve them anytime.

Mr. CARNEY. Thank you. That's all the questions I have, Mr. Chairman.

Mr. GLICKMAN. Thank you.

Mr. McCandless.

Mr. MCCANDLESS. Thank you, Mr. Chairman. I have no questions at this time. I think we need to move along. We've gone a little bit astray from rail track safety monitoring technology, although it's very interesting and very informative.

Mr. GLICKMAN. Thank you, Mr. Snyder. We appreciate your being here very much.

Mr. SNYDER. All right. Thank you.

Could I speak just one final comment there——

Mr. GLICKMAN. Yes.

Mr. SNYDER [continuing]. On the wrecks that's been involved here?

The Vermont wreck was absolutely uncalled for. We have asked since 1976 for bridge regulations and all. A lot of these bridges are old, just like the highway bridges.

Mr. GLICKMAN. In your statement I think you say there is no Federal regulations——

Mr. SNYDER. No Federal regulations and all. Now, you haven't heard it over here, the beavers' dam, I never heard of that. A railroad well constructed, and especially where they have first-class passenger trains, should be able to withstand floods, beaver dams, and whatever you might have. I know the railroad I come off of, for 42 years I've been a conductor and everything. Right along the river, we had high water and everything, but we never had one to turn over because the roadbed was good. We had a lot of passenger trains at that time.

Mr. GLICKMAN. Thank you.

Mr. SNYDER. There's no excuse for it.

Mr. CARNEY. Mr. Chairman, I think we have an area where we might strike up some cooperation with Mr. Snyder, because the responsibility for reporting accidents clearly indicate here that an injury to one or more employees which require medical treatment or results in, one, the restriction of work or motion for 1 or more days, or 1 or more lost working days, transfer to another job, termination of employment or loss of consciousness, you would have to report. So they can't take a guy from the job and transfer him someplace else because he was incapable of doing so. So if you notice that, you should bring that to our attention and maybe we can do something about it.

Mr. SNYDER. We have it all over the country. They don't transfer them. They just let him stay at home or come out there and report whether he's on crutches or not, just report and go back home.

Mr. CARNEY. Then they're in violation of the rules and that should be brought to—we'd be glad to have it brought to our attention because we would be glad, as a committee, to look into that.

Mr. SNYDER. Well, this is another way—they feel like they're being harassed or lose their job if they don't comply with it, you see.

Mr. CARNEY. I can appreciate that. I think if it was brought to our attention we might be able to do something about it.

Mr. SNYDER. We sure appreciate the opportunity anytime to cooperate with this committee any time we can be of service.

Mr. GLICKMAN. I have read your complete statement. It is very helpful.

Mr. SNYDER. Yeah. We monitor this day in and day out with the employees, the people that operate these trains daily out here, so we try to convince you with as factual cases as we can.

Mr. GLICKMAN. Thank you very much.

Mr. SNYDER. Thank you very much, Mr. Chairman.

Mr. GLICKMAN. Our next witness is Mr. Barry Williams, assistant director, National Association of Railroad Passengers. It's a pleasure to have you here. Sorry you had to wait so long. It often happens as these hearings. Fortunately today, however, you haven't been burdened with roll call votes which makes matters much worse.

STATEMENT OF BARRETT M. WILLIAMS, ASSISTANT DIRECTOR, NATIONAL ASSOCIATION OF RAILROAD PASSENGERS

Mr. WILLIAMS. We appreciate the opportunity to be here and provide the passenger perspective.

Mr. GLICKMAN. You may summarize as you deem appropriate. Your entire statement is included in the record, realizing we have some time restrictions here.

Mr. WILLIAMS. Right.

We are a nonprofit group. We represent the Nation's railroad passengers. What with this last month's rash of accidents, we're beginning to feel like an endangered species. But really, Amtrak's safety record is excellent. I document that in my written testimony. The previous witnesses have done so orally.

I'll just speak about weather, flash floods in particular, and grade crossings. These are the two areas that we have concentrated on this year.

In the weather area, I think it's just very unfortunate that the other railroads did not emulate the Burlington Northern after their experience 2 years ago at Emerson, IA, with the washout and subsequent derailment. As I recall, the autopsy concluded that the Amtrak passenger who died actually drowned in that mishap. Burlington Northern did subsequently voluntarily tie in with the National Weather Service. Central Vermont did not. Baltimore and Ohio did not, either. Within the past few months we did have very similar incidents occur on both of those railroads.

The good news, I just heard yesterday in the Senate testimony, is that Central Vermont has now done the same thing as Burlington Northern.

On July 11 we formally asked the FRA to mandate all railroads monitor weather continuously, 24 hours a day, instead of just taking these periodic snapshots every 6 hours, which BN had done prior to Emerson. Enough said on that.

Grade crossings are probably the most frequent cause of accidents on the railroads. It is, to my knowledge, the single biggest cause of fatalities in the rail industry, primarily on freight trains. Fortunately, we have not yet lost an Amtrak passenger as a result of a grade crossing accident, but we have seen a number of injuries. It is very disturbing. For instance, on March 15 of this year, to see a gravel truck whose driver evidently did not even look either way down the railroad before proceeding out right in front of a train, passenger train, doing 79 miles an hour. The train derailed and there were some serious injuries. Fortunately, no one died in the train.

I don't know what we can do about the crossing accident problem. It's a nagging problem. We've got over 200,000 of these public crossings, and you're not going to get rid of all of them. The price tag would just be unbelievable. But there are a couple of things that just occurred to me this morning. I've just been trying to think of creative solutions to this.

It seems to me that the cheapest and the easiest way to tackle this thing is to provide an incentive to the State and local governments, the law enforcement agencies at those levels, to ticket people who violate these gates and lights or stop signs. There's a county in northern Georgia that has done this and they have wiped out their accidents at grade crossings. If you are caught doing this, running in front of a train, you're guaranteed a $50 ticket and that's pretty steep. I would like to see that nationwide, and to the extent the Congress, through strings attached on the Federal aid highway bills, can help influence the State and local law enforcement people to do this, I think that would be really in the public interest.

Perhaps another solution would be to tie this in with urban development action grants, or the money that is provided to cities. Perhaps you could have an exchange program whereby cities could trade in some grade crossings in return for additional money through UDAG or this type of thing.

Let's close some of these things. There's just too many of them. A lot of them really aren't essential.

I'll just close by saying that we fully support what the FRA is doing on the drug and alcohol issue. It's long overdue. It seems to be a fairly significant problem in the industry.

[The prepared statement of Mr. Williams follows:]

Statement of

BARRETT M. WILLIAMS

Assistant Director

National Association of Railroad Passengers

Before the Subcommittee on Transportation, Aviation and Materials

Committee on Science and Technology

U. S. HOUSE OF REPRESENTATIVES

Rail Track Safety Monitoring Technology

July 27, 1984

Mr. Chairman and Members of the Subcommittee, thank you for this opportunity to present the views of our Association, which is non-profit, consumer-oriented, and supported entirely by membership dues and contributions. We receive no financial support from the government, Amtrak, the railroads, or the rail labor unions.

As the table below shows, Amtrak's overall safety record remains excellent, and you are far safer on a train, intercity bus, or airplane than in your private automobile.

	Passenger Fatalities Per 10 Billion Passenger-Miles
Motorcycle, 1977	1,445
Automobile, 1974-76	141
Automobile, 1976-81	130
Airplane, 1974-76	6*
Intercity bus, 1974-76	3**
Amtrak, FY '76-FY '84	3***
Amtrak, FY '76-FY '83	1

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* - Comparable year-by-year figures, 1970 through 1982: 0, 15, 13, 10, 12, 8, 0, 4, 1, 12, 1, 0, 11.

** - Includes charter. Comparable year-by-year '70 through '82: 2, 9, 17, 17, 6, 2, 1, 4, 1, 2, 13 (Bradenton-St. Petersburg bridge collapse), 1, 4.

*** - Fatalities through July 23 (Queens); Amtrak's projected FY '84 passenger-mileage of 4.697 billion. (Amtrak's fiscal year will end Sep. 30.)

In over 13 years of operation, Amtrak has experienced 25 passenger fatalities (including one passenger who died after a post-derailment operation). 10 (40%) of these were in a June 10, 1971, derailment less than two months after Amtrak's inauguration of service. Between July 5, 1974, and July 9, 1980, there were no passenger fatalities.

NARP's faith in the safety of passenger train travel has not been shaken, but we hope recent events will lead to efforts by this Committee and all public officials, railroad managements, and motorists, to improve safety at grade crossings and to make all trains less vulnerable to flash floods. These are railroad problems, not just passenger-train problems.

Weather Monitoring: Amtrak alone has experienced three derailments where emergency weather bulletins had been issued but the information never reached the engine crews: June 15, 1982, near Emerson, Iowa; May 29, 1984 near Connellsville, PA (no fatalities); and July 7, 1984 in Vermont.

After learning from bitter experience in Iowa, the Burlington Northern began continuous weather monitoring, using electronic scanners (in the railroad's central dispatching office) linked to the National Weather Service. The tragedy is that other railroads, notably the Chessie System and Central Vermont, evidently did not learn from the Iowa experience. We understand, however, that Chicago & North Western has been monitoring weather continuously for several years, and that Amtrak has begun doing so in the past year.

Consequently, in a July 11 letter to Federal Railroad Administrator John H. Riley, NARP President John R. Martin asked for federal regulations requiring railroads to monitor weather continuously, alert engine crews immediately when relevant emergency weather information is received, and make special inspections during flood alerts of track known to be at risk during such alerts.

Martin also asked FRA to examine the question of whether restrictions should be placed on operation of trains whose radios do not work. Newspaper reports indicated the "Montrealer's" radio was not working. Since, however, the flood alert was issued about eight hours before the derailment (i.e., before the affected engine crew even went on duty) and railroad officials didn't know about the alert, the radio's condition would not likely have been significant here.

Human Error in Marshall, Texas: The November derailment in Marshall, as we understand it, resulted from a track gang violating elementary rules of procedure when installing a new piece of rail. Freak accidents such as this are relatively rare, but we know of no technological "fix" to prevent them. Tighter management supervision is all we can suggest.

July 23 in Queens: It appears that this accident could have been prevented or its severity greatly reduced by the modern signal system which is to be installed on this track next year as part of the Northeast Corridor Improvement Project.

Dispatching of trains without signals is done routinely all over the country with a "multiple-check" procedure that normally works. (In Queens, the westbound train was without signals because the two main tracks are signalled in one direction each, and the normal westbound track was out of service.) But train-order dispatching clearly is not as safe as dispatching trains with signals, and is more vulnerable to human error.

July 11 in McBee, SC: We understand that highway traffic was rerouted around a grade crossing with protective flashers, on which work was being done, to an unprotected crossing. Furthermore, flagging protection was not provided at the latter.

The situation was exacerbated by strings of freight cars parked on outside tracks, obscuring the truck driver's (and the engineer's) visibility. Thus, the accident would appear to be the fault of the railroad (Seaboard) or the local highway department. Whichever organization was working on the "good" crossing should have stationed a person with a flag at the crossing in use to signal motorists to stop just as mechanized protection does where it exists.

Hope for Grade Crossings Generally: The good news is that grade crossing accidents and fatalities are on the decline. All grade crossing fatalities involving freight and passenger trains dropped from over 1,100 in 1974 to 580 in 1982 (1983 estimate: 541). Grade crossing accidents have declined steadily from about 12,000 in 1978 to 7,158 in 1982 (1983 est.: 6,546). Amtrak trains experienced 121 grade crossing accidents in 1983.

Our challenge is to get other states and localities to emulate such places as Gwinnett County, near Atlanta, which has virtually eliminated grade crossing accidents--there have been none for at least the past 2½ years. Gates and flashing lights protect almost all of their crossings, and the police enforce an ordinance imposing a $50 fine on motorists who violate grade crossing warning devices.

We are asking the authorizing committees with Amtrak jurisdiction to consider federal legislation to spur local action on grade crossing safety so that proven safety measures will not have to await individual local politics across the nation; clearly there is a federal interest in improving grade crossing safety quickly.

In March, NARP called upon states and cities to:

"1) Strictly enforce traffic laws forbidding motorists from violating crossing lights and gates. Ignoring a crossing signal should be deemed as serious an offense as running a red traffic light. As many as half of annual U.S. grade crossing mishaps occur at crossings with signal protection.

"2) Eliminate (close) all grade crossings which are not essential.

"3) Seek federal highway funds from the 1982 Surface Transportation Assistance Act to build grade separations (overpasses/underpasses) to replace crossings having heavy traffic volumes.

"4) Fund improved signal protection for those crossings not eliminated through closure or separation.

"5) Ban commercial trucks from grade crossings wherever an alternate route with a grade separation is within a reasonable distance.

"6) Participate in "Operation Lifesaver," an educational program sponsored by the National Safety Council, the railroad industry, and various law enforcement agencies, aimed at teaching motorists and future motorists (children) to respect the dangers of grade crossings."

(Quotation is from a release we have been distributing since March.)

Grade crossing accidents are usually not fatal to passengers. On July 11, after the "Silver Star" running at about 60 mph hit a gasoline tank truck in McBee, SC, not one passenger was even hospitalized, although the truck driver and the train's engineer were killed.

Mr. GLICKMAN. As a representative of the, you know, organization of railroad passengers, are you satisfied with Amtrak? They're given limited responsibility, which is incredibly limited. Are you satisfied with their safety consciousness?

Mr. WILLIAMS. There is just no question that Mr. Claytor's first priority is safety. That comes through loud and clear, ever since he took the post of president 2 years ago. I think it's very committed to safety, and I think that's true of all the contractor railroads. None of these railroad presidents want to kill people on their railroad.

As I say, we have formally requested this weather monitoring rule. It would have been nice if the industry had just done this voluntarily. And maybe, if Amtrak can help pressurize these contractors, maybe we don't even need a Federal regulation. But I think these railroads have got to watch the weather bulletins. I think the two accidents that we had on washouts this spring possibly could have been avoided.

Mr. GLICKMAN. What's your feeling about the FRA in terms of its dedication to moving ahead on a variety of safety issues, track safety, new technology? I mean, are you satisfied with the FRA's capabilities?

Mr. WILLIAMS. I think John Riley and his staff are very capable, and I don't know how big the staff is. It's been my understanding that it's been cut over the years. But I know the commitment is there to safety and I would have to answer yes, I think they really are trying.

Conrail is really tying up the staff at the moment, and the drug and alcohol rule, and as John pointed out, as soon as these are under the bridge, he would like to go after radio and that type of thing. I think they're trying pretty hard.

Mr. GLICKMAN. Well, I appreciate your coming down here. I would encourage you to feel free to, you know, give us your ideas. You have good access here. You are not affiliated with any of the, financially, with any of the parties who either testified here today or who are involved with the industry, at least according to your statement——

Mr. WILLIAMS. That's correct.

Mr. GLICKMAN [continuing]. Nonrailroad, nonunion, and nongovernment. For that reason, I think you would have a lot of credibility, and don't be shy about bringing ideas here.

Mr. Carney.

Mr. CARNEY. Mr. Williams, would you care to comment on Operation Lifesaver?

Mr. WILLIAMS. I'm no expert on it, but from what I know, wherever this exhibit has traveled, with films and the lectures, there has been a marked decline in the incidence of accidents and fatalities.

Mr. CARNEY. You know, it's amazing. I think Mr. Claytor really hit the nail on the head. People—I don't know what it is, and I'm thinking to myself. I probably fit in that same category. There seems to be a challenge about beating that gate down when you come up to a railroad crossing, but there's not a challenge to go through a red light because of the fear of getting a $25 ticket. And there is probably a greater chance of being killed racing a railroad train than there is sneaking through a red light.

I'm not sure, but it just seems a fluke in human nature, the gamble of people. I don't know how to put——

Mr. **Williams**. The almighty dollar, I guess.

Mr. **Carney**. Yeah. But you're coming around, and it's been throughout the entire testimony today of other witnesses—and I think the members of the panel picked up on it, too—that law enforcement at gate crossings is probably the quickest and most effective way that we can substantially reduce those types of accidents. I'm glad you brought that to our attention.

Mr. **Williams**. It's a real money-making proposition, too, for the jurisdictions, at least in the early years, until everybody learns not to——

Mr. **Carney**. I can tell you, in my home town we put on a DWI program and we significantly reduced—when I say my home town, I should be more specific and say my county—we significantly reduced the loss of life, the amount of accidents, and I'm sure our county treasury has benefitted by it immensely, too. If we could do that same thing across this country with the railroads, it might have that same type of effect.

For the record, I agree with you completely on your thoughts pertaining to maximizing the use of weather service to prevent the types of accidents that happen because of flash floods and that type of thing. But I was under the impression—I just want to clear this up in my mind—that the Vermont accident, although weather related, was something that we had two crews go out and inspect the track and they didn't find the problem.

Is that, to you—does that indicate to you that we might not have the ability to recognize when the track beds are being undermined or anything?

Mr. **Williams**. The reason I said who can be sure whether these two spring accidents on the washouts would have been prevented is you are just speculating. What is definitely true is that if you know your railroad, if you work out there in the civil engineering department of a railroad, you know those parts of the property that are water prone, and if you get a bulletin from the weather service, you don't have to inspect the entire division, but you can go to those points which have a history.

Mr. **Carney**. Right, and I agree with you. I'm just—there's a part missing, and I'm trying to figure out what that part is. They, although were not monitoring weather service, they did inspect the track twice because of the weather conditions. And having inspected the track twice, they were unable to detect the track failure. I'm wondering if our equipment that we speak about and our track investigations that we presently conduct are adequate enough to recognize when a railroad bed is being undermined or whatever. That's just, you know, an observation I'm making.

Mr. **Williams**. Mrs. Goldman yesterday on the Senate side, as I remember, said that there had been one of the twice-weekly mandated inspections of that railroad by the safety people, and then a train crew, southbound, had come through—I thought she said the next morning, shortly before the passenger train. But I shouldn't comment since I'm not certain of that.

There is also the possibility that even if people had been out there with umbrellas in the downpour walking the roadbed, they might not have seen buckling. If, in fact, the culvert down at the base—you see, the railroad was way up on a tall earthen fill with a small culvert at the base. It might just be that the failure of the culvert wouldn't have been detectable up above until the weight of the train passed over it.

Mr. CARNEY. Absolutely, which makes it difficult——

Mr. WILLIAMS. That is one of those things that you probably have to blame on God.

Mr. GLICKMAN. Thank you, Mr. Williams, for your testimony. I appreciate it.

Mr. WILLIAMS. Thank you, Mr. Chairman.

Mr. GLICKMAN. The last witnesses are Mr. William J. Harris and Mr. William Johnston with the American Association of—the Association of American Railroads.

STATEMENTS OF WILLIAM J. HARRIS, VICE PRESIDENT, RESEARCH AND TEST DEPARTMENT, ASSOCIATION OF AMERICAN RAILROADS, ACCOMPANIED BY WILLIAM JOHNSTON, VICE PRESIDENT FOR OPERATIONS AND MAINTENANCE; CLIFFORD OWENS, VICE PRESIDENT, ENGINEERING AND STAFF, CONRAIL; AND J.R. CLARK, ASSISTANT CHIEF ENGINEER, CONRAIL

Mr. HARRIS. Mr. Chairman, I am vice president for research of the Association of American Railroads. Mr. Johnston, who is vice president of the operations and maintenance department, is with me.

Mr. GLICKMAN. We appreciate your being here and we're sorry that you are last, but——

Mr. HARRIS. Someone has to be last.

Mr. GLICKMAN. That's right.

Mr. CARNEY. He who is last shall be first.

Mr. GLICKMAN. In any event, as I said, your statement is in the record in its entirety, so you may feel free to summarize.

I see you have a space shuttle tie. Did you wear that for this room today?

Mr. HARRIS. I thought it was relevant.

Mr. GLICKMAN. OK, go ahead.

Mr. HARRIS. I have with me Mr. Clifford Owens, who is vice president of engineering and staff of Conrail, and Mr. Clark, who is assistant chief engineer of Conrail, in case technical issues come up that are more germane to operating railroad personnel.

There are a few things I would like to summarize in my testimony. First, I think it is totally appropriate to assert the commitment of the railroad industry to safety. It is also important to recognize that railroads are required to report to FRA their accident experience. We have monitored those. We have monitored them jointly with labor to be sure the reporting was being done in a professional and accurate fashion. The responses have always been in the affirmative that, indeed, the data that go to FRA are accurate accounts to the best of the ability of the railroad to make that accurate account.

I would like to summarize for you some of the data in the last part of the report, in the tables. They do indicate through 1983, from 1980, that train accidents per million train miles have gone down in all categories—in track, equipment, in human factors, and in combinations of those factors lumped under the category miscellaneous. Our data into 1984 are not able to be analyzed in the same way, and that's why we present to you no 1984 data.

I would like to point out that data which you do not have in this report to respond to one of your questions. We can determine by financial level the intensity of the accident, from $10,000 up to $100,000 and more. From 1978 to 1982—and I'll submit testimony to this effect—accidents basically at the threshold level were reduced by 60 percent; accidents at the $10,000 level reduced by 57 percent; accidents at the $25,000 level reduced 58 percent; and accidents at the $100,000 level reduced by 53 percent, which means all categories of accidents have been coming down, not just small accidents or not just large accidents.

I think it is important in table 3 to recognize under train accident casualties that derailments, while surely important and significant, are not the cause of many fatalities. These derailments from 1980 to 1983 caused eight, five, eight and eight fatalities. Collisions caused a somewhat higher number of fatalities, but all told, derailments and collisions caused far less than half of the fatalities that occurred in railroad accidents among passengers and employees. Passengers obviously are involved in these two categories. Those employees that are killed more frequently are killed by being struck by trains, not by riding on trains that are involved in collisions or in derailments.

In table 4 we do show that on a nonnormalized basis that is not adjusted for any category the number of fatalities by employees have gone from 100 down to 63. None of us are proud to have 63 employees killed, but the numbers have been going down. And if you examine these in terms of the casualties normalized per million ton miles, you will see that there has been no increase in those casualties.

Mr. Carney. Mr. Harris.

Mr. Harris. Yes.

Mr. Carney. At that point, if I may, with the chairman's permission, I would like to ask why did you exclude grade crossings in your statistical base on fatalities of employees?

Mr. Harris. We are perfectly prepared to put the grade crossing data in. We just excluded them because the grade crossing accident we regard as more a highway accident than a railroad accident.

Mr. Carney. Thank you.

Mr. Harris. When there are employees and passengers and trespassers and nontrespassers, those are issues that occur, if you will, exclusively on railroad property. The grade crossing situation is technically different from our point of view.

Mr. Carney. Thank you.

Mr. Harris. Returning to the text, I would like to talk about the problem and the issues having to do with track defects. This has been a matter of concern to you; it's surely a matter of concern to us.

As you will see on page 3, the number of fatalities related to track and trackbed have gone 3, 0, 4, 1, 5, 6, but some of those are landslides, some are rock slides, some are washouts. They are not, in the narrow sense of the word, track defects; that is, some failure to maintain the railroad in a proper fashion for the correct running of trains.

If you compare that limited number of fatalities absent the landslide, rock slide, washout area, with the total employee and passenger fatalities shown in that same table on page 3, you find that only a few percent of the fatalities are track related, and therefore track is not a primary cause of fatalities in the railroad system as we observe it at the present time.

Now, we have had categories of accidents in the past that have been—that have required us to focus major attention on them, and Mr. Claytor referred to one of those, the Laurel accident, where a tank car ruptured violently. I don't know why sequences of accidents occur as they do, but from 1957 until 1968, we have had about 6 or 7 of those kinds of incidents per year; in 1969 we had 41, and it returned to 6 or 7 the following year. There are random sets of frequent accidents that don't recur, and unfortunately I think we're seeing that kind of a perturbation in the data for this month for Amtrak.

In regard to the tank car rupturing problem, the tank car industry and AAR cooperated immediately, starting in 1970, on finding a solution to that problem. FRA participated. We found the solution. We don't have those kinds of accidents any longer. The violent rupture of tank cars is, for all practical purposes, a thing of the past. Possibly we've had one in 4 years. We used to have seven per year.

Research can make a real contribution to improving safety, and it is my job and that of my colleagues in FRA and in railroads, and in the railroad supply industry, indeed to pursue that objective.

We are examining rail very carefully. Rail is better than it was. It's manufactured with better control. We use as much heat-treated and alloy rail as it's feasible to do in view of its improved properties, although it must be handled carefully. We are gradually improving the inspection technique to determine flaws. We are having fewer rail failures each year.

We are very much committed to inspection of track before and after FRA regs were in place, because safety was as much an objective of railroads in earlier days as it is today. My colleagues can describe to you their detailed procedures for inspecting track if you wish.

But we do have many modern track geometry cars in place which sense various geometric relationships between the track. Those are used to program maintenance or to identify areas requiring spot maintenance. But track geometry cars are not required to achieve that. Hand-held devices are perfectly satisfactory, though slower to use, and they cover track less rapidly.

We have been studying since 1972, in an international cooperative program, the dynamic interaction of track and the trains that go over that track. From that research program, we have identified and we now can, with mathematical models, establish the nature of track perturbations that must be avoided to ensure safe train operation. We have identified the components, the suspension systems and the train-handling characteristics necessary to minimize excessive loads on track so as to provide for safe operations. All of that information is now in training programs for the industry. It is now reflected in the track maintenance practices, and FRA has in progress a major reanalysis of track standards taking into account that modern information and we are working in a very cooperative fashion with them.

We have underway, within AAR, with funding from the industry, with contract funding from FRA, with cooperative funding from the supply industry and the contractors and substantial funding from Canada, studies on every component whose failure can cause a derailment—wheels, track, tie failures, other components in the train—and our problem is a very difficult one. No more than 2 or 3 percent of accidents are caused by any one of the given causes. There are 260 causes in the FRA track report, accident reporting form. And so our difficulty is that no longer can we hope for dramatic great improvements in rail safety as a consequence of devoting attention to one issue alone. That's the reason we have to have a broadly-based program and try to push forward on many fronts at the same time.

That research effort is being carried on with much help from the universities. About 10 percent of my research funding is spent in the universities, with help, as appropriate, from the technology utilization program of NASA, although we found that our technical issues are enough different from those that NASA has worked on and I have not really been able to apply any of the generic specific findings of that program.

Mr. Glickman. Do you do any human factors research?

Mr. Harris. We are doing human engineering kinds of research; that is, we are examining how employees do jobs, how they—what the forces and stresses on them in those jobs are, and how we can adjust the job from an ergonomics point of view to be more responsive to the human body and still get the job done.

We are engaged in training programs of a variety of kinds, and we expect to be expanding that training. But I am not at this moment doing major studies on, for example, the effects of fatigue on capability to continue to perform functions in the railroad environment, though we're looking very carefully at when and how we ought to move into that field.

Mr. Glickman. How much do you spend on your research—the AAR spends on its research-related functions or activities?

Mr. Harris. In 1984, my total—the total amount of research that I'll be managing will amount to the order of $35 million.

Mr. Glickman. OK. Now, is that the private share or is that——

Mr. Harris. No, that's the aggregate of FRA funding, cooperative support and input from others. I might tell you that number is up from $700,000 in 1970.

Mr. Glickman. How about the FRA component of that figure? Has that gone up?

Mr. Harris. The FRA component is about $9 million of that figure.

Mr. Glickman. Has that been stable or has that been going down?

Mr. **Harris**. It went up in one sense, in that when FRA decided it no longer wanted to manage the Transportation Test Center, and I asked and proposed that we take over the responsibility for managing it, FRA, that had been spending upwards of $15 or $18 million a year on the test center, contracted with us to do between 7 and 8 million dollars' worth of work to carry out programs that previously they had been carrying out under their own direction with our cooperation. So it has gone up in a narrow sense, although it's the same money that we used to be spending together under their direction.

Mr. **Glickman**. That sum, the $35 million, is not an insignificant sum to do competent research. I'm impressed by the number.

Mr. **Harris**. We're hoping it will be significant. We expect it to be significantly larger next year. Our budget is just in the process of being reviewed by the Board and will be hopefully approved at a higher level next year.

No, we have made significant progress in winning support from the industry for the support of research because we have been able to demonstrate it pays off.

[The prepared statement of Mr. Harris follows:]

STATEMENT OF
W. J. HARRIS, JR.
VICE PRESIDENT
RESEARCH & TEST DEPARTMENT
ASSOCIATION OF AMERICAN RAILROADS
BEFORE THE
SUBCOMMITTEE ON TRANSPORTATION, AVIATION AND MATERIALS
OF THE
HOUSE COMMITTEE ON SCIENCE AND TECHNOLOGY
July 27, 1984

Safety is a continuing matter of profound concern to all members of the railroad community. It has been a focus of research activity since the beginning of research activities in the industry. In particular, it has received primary attention in the last fifteen years. Any accident is deplored by the industry. Any injury or fatality is regarded in the most personal sense by the management and employees of companies. The railroads do not willingly tolerate unsafe conditions.

Railroads are required by law and regulation to report accidents to the Federal Railroad Administration. This process has been audited carefully in recent years by management and by labor to ensure that reporting was timely and accurate. The audits were convincing. In fact, some railroads were thought to be reporting more than really was necessary.

The data on railroad accidents have been extremely encouraging for the last four years, but there has been some leveling off and a very slight reversal in some categories in the first few months of 1984. These data are summarized in the attached tables.

The data are normalized; that is, they represent the frequency of accidents, injuries and fatalities per million train miles of traffic. However, we do not have enough experience in analysis of data over a long enough period of time to understand whether there are levels of safety that can be obtained at a low level of traffic which cannot be obtained even on a normalized basis at a higher level of traffic. The frequency exposure or congestion problem may have an effect which our data have not yet revealed. While we would like the accident rates to go down continuously until there were no accidents, we are not likely to find such a circumstance.

There are 230 different causes of accidents identified in the FRA reporting forms. Only one cause accounts for more than 5 percent of all accidents; all other causes each account for much less than 5 percent of all accidents. Thus, if we had no more accidents arising from broken rail, we would reduce the number of accidents by less than 2 percent. If we had no more accidents from broken wheels, we would reduce the accidents by about 1 percent, and so on. This does not mean that we should not continue to try to improve railroad safety. It means that actions taken to concentrate all attention on a single source which may be involved in a spectacular accident may divert attention from other opportunities for safety and may not result in a significant decrease in accidents.

It is important to understand that fatalities due to track defects are a miniscule part of the transportation safety problem. The government's own records indicate the following fatalities each year from track and trackbed defects:

	TRACK AND TRACK BED RELATED FATALITIES		TOTAL EMPLOYEE AND PASSENGER FATALITIES
1978	3	(2-landslide)	144
1979	0		108
1980	4	(2-rockslide)	104
1981	1		70
1982	5	(4-washouts)	85
1983	6	(4-rail shatter)	67

Most of these 19 fatalities in six years have nothing to do with the track itself as 8 of the fatalities were caused by earth or rock falling onto the track (4) or washing out from under it (4). Of the remaining 11 fatalities, 4 occurred in last year's Amtrak derailment at Marshall, Texas which involved the shattering of a new, premium, more costly type rail. This failure was on track that had rail newly replaced only two months prior to the accident. This incident is being intensively investigated.

The fact of the matter is that track defects have led to less than 2 percent of the employee/passenger fatalities in railway-related incidents in the last six years.

Nevertheless, a large amount of work is going into improving this situation to ensure fatalities continue to be kept as near zero as possible, and to reduce less severe consequences of track defects, such as minor injuries, costs to railway companies, and service interruptions.

Certainly, this superb record of railroad track in the United States is a testimony to the high regard railway track professionals have for the safety of rail transportation.

Some accidents are of a character to warrant special attention. That was the case in 1970 when we began active research with the tank car industry on the issue of violent ruptures of tanks containing liquified petroleum products and other pressurized flammable gasses. That problem has been solved. Retrofit measures have been taken that have virtually eliminated the puncture of tank car heads. These measures have also made tank cars much more resistant to fires. The rate of violent ruptures of tank cars has fallen from an average of about seven per year, to no more than one total in the past four years. While some hazardous spills occur, the public risk has been significantly reduced by improved tank car design and retrofit.

Rail failures have been observed to decline regularly over the past five years. New rail materials are better. Rail inspection techniques are gradually being improved.

The railroads and their contractors use special railway cars to detect internal flaws in rail. One contracting company has 26 such vehicles which inspected 400,000 miles of rail in 1981, and about an equal number are owned by railway companies and other contractors. All major railways use track geometry cars to measure the quality of the alignment, surface, and gauge of the track to check that they are within requirements. In addition, the FRA runs its own self-propelled track geometry car, called T-10, as a check on the railroads' own efforts.

There are many smaller devices for checking track geometry in daily use all over the country in addition to the eyes of experienced track maintenance professionals. With these cars and devices, more attention is now being paid to the perturbations in track than previously was the case. Heavier trains have demanded more frequent inspection of track. Increased knowledge of the interaction between a train and track structure through such programs as the International Cooperative Track Train Dynamics Research Program has brought to the attention of railroad operating personnel the need for very close adherence to internal maintenance standards and, of course, full compliance with FRA regulations.

Track inspection is performed in accordance with the FRA Track Safety Standards. Each inspection must be made on foot or in a vehicle at a speed that permits visual, mechanical, or electrical inspection of track structure. Main line track and sidings in the high speed categories must be inspected twice weekly with at least one calendar day interval between inspections. Lower speed main line track and sidings are to be inspected once a week unless passenger trains are operated over the track or they are subject to heavy use. In those cases two inspections per week are required. The Standards provide that remedial action be taken immediately if a defect is found. Failure to make inspections and maintain records of such inspections subjects a railroad to civil penalties. Failure to take remedial action also results in penalties by the FRA. The penalties range from $500 to $2500 for each violation and each day of continuing violation.

Work has been continuing at the Transportation Systems Center at Cambridge, Massachusetts regarding possible revisions to the FRA Track Safety Standards. These standards, while much improved in 1982 following FRA agreement with changes proposed jointly by labor and management, still contain wording which prohibits particular conditions which are in no way unsafe, such as restrictions regarding particular configurations of ties under joints which are in excellent condition. But in other instances, these standards may not address certain conditions relevant to safety because the technology and techniques to measure these conditions do not exist. The Transportation Systems Center has been working on these problems, which include (1) longitudinal force measurement in rails, (2) a "cross level index" to truly relate track surface condition to derailment probability, (3) flaw growth in rails to set realistic internal rail inspection intervals, (4) rail restraint studies to develop a performance standard regarding strength of track components in service, and (5) studies on lateral track stability against buckling.

The industry is cooperating with the Transportation Systems Center by providing test sites, trains, personnel, and review of theoretical studies to relate them to actual service conditions.

Braking systems have been improved rapidly over the past two decades. New brake shoes have proved to be reliable and uniform. Research starting in 1972 identified analytical tools that could be utilized to screen out wheel designs that were much less likely to fail under combined thermal and mechanical stresses than previous designs. All of the new wheel designs are required to be evaluated and found to be satisfactory using these analytical methods.

Research on freight equipment management has demonstrated significant ways to reduce empty car miles. High car miles increase the exposure of the equipment, track and personnel to accidents. Accordingly, an improvement in the efficient use of transportation reduces exposure and improves safety. Fewer train miles required to generate a ton mile of traffic means fewer cars are moving and fewer accidents are likely to occur.

The Transportation Test Center was built by the Federal Railroad Administration. In 1982 when FRA decided it no longer wished to maintain management responsibility for the Test Center, the AAR, under contract, assumed that responsibility. There is no guaranteed underwriting from FRA or any other guaranteed source of financial support for the Test Center. The Test Center, therefore, must gain enough income from contract programs and assigned work from AAR in order to operate. It has been functioning since October 1982 on this basis.

A major part of the program continues to be operations on the Facility for Accelerated Service Testing. In this program, special studies continue to be made of the behavior of rails, ties, ballasts and other track components, as well as some studies of the behavior of equipment under these controlled conditions. There have been remarkable developments as a result of FAST operations. It has been found that lubrication of track not only reduces wear, which has long been known, but also that it reduces energy requirements by a very significant fraction (from 10%-50%) depending on degree of curvature. Careful tests have been made that establish that there is no reduction in adhesion and no reduction in stopping distance with track that is lubricated correctly.

In the FAST loop, special studies are being made of the rate of growth of flaws in rail as an aid toward better regulatory decisions on rail inspection. These will be the first such tests performed quantitatively in a full service environment on this issue.

Another major program at the Transportation Test Center involves use of the Vibration Test Unit or the study of the movement of lading in containers, trailers, and box cars. The vertical actuators in this unit are sized so as to permit test of a loaded full scale car. The hydraulic actuators are driven through a computer. The input to the computer is in the form of a magnetic tape collected during actual rail operations. Thus, the design of the Vibration Test Unit permits the study of the behavior of lading under controlled conditions with the same dynamic inputs as it would receive in regular operations. These tests are proving useful in reducing the damage to lading and contributing in that arena to improved railroad efficiency and effectiveness, as well as safety. The Vibration Test Unit is also being used to characterize the dynamic response of freight cars.

The Transportation Test Center will also be the site of important tests to be sponsored by FRA in the near future on the puncture resistance of chlorine cars. While the safety record of chlorine cars is extremely good since they went into service (there have been a few cases of leaks), it is prudent to try to establish more precisely the conditions under which penetration of the shell is possible in an abnormal service environment. These tests are similar in character to those conducted in 1977 as the final basis for qualifying the headshields and shelf couplers applied to HM112 and 114 cars in the subsequent retrofit program.

The Federal Railroad Administration has entered into a major contract with AAR for the study of thermal damage of wheels as indicated previously. While part of this work will be conducted in the AAR's Technical Center in Chicago using a newly acquired dynamometor for testing of wheels under controlled conditions, a significant fraction of the work will be conducted under railroad operating conditions with set brakes and stuck brakes. These laboratory and field tests will permit the development of a much more complete understanding of the mechanisms and circumstances under which thermal damage can be inflicted on wheels. This program coupled with further studies on improved wheel flaw detection should make it possible to have a much more rational regulation, in regard to a basis for wheel removal, than currently is the case. Thus, a smaller number of wheels would be removed from service, but the wheels removed would be wheels that truly were thermally damaged.

Under the Track Train Dynamics Steering Committtee, specifications were prepared for a new generation of more stable cars, particularly covered hopper cars. These cars with their high centers of gravity have been found to be slightly more prone to be the first car in a derailment than other classes of cars. A dynamically more stable car would have less tendency to derail in the presence of selected kinds of track perturbations and would, therefore, be a safer car to operate. One car built to these approved specifications is showing great promise of achieving the desired objective.

The AAR, in its research program, has work in progress on all aspects of problems that are known to cause derailments. Every component with any significant fraction of train accidents associated with it has been, or is being, studied to determine ways of improving either materials, designs, fabrication technology or inspection techniques.

Employee injuries are being studied carefully. Lower back injuries represent a significant fraction of personal injuries. Programs in progress are identifying the stresses placed on all joints and muscle groups of the body in the course of performing job-related movements. These are being compared with data on human performance capability. Some jobs are being redesigned in order to reduce the stresses and the possibility of personal injury. This program is being extended to other kinds of railroad work and being distributed to the railroad industry for appropriate action.

Through continued monitoring of train accidents and continued research on a cooperative basis with suppliers, railroads, and government, the AAR intends to make a continuing contribution to improved rail safety through changes in specifications, procedures, and practices.

TABLE 1

Train Accidents By Major Cause
Adjusted Thresholds
1980-1983

(excludes grade crossing accidents)

Major Cause	1980	1981	1982	1983
Track	3301	2262	1672	1572
per MTM*	4.6	3.35	2.92	2.85
Equipment	1390	1015	769	634
per MTM	1.94	1.50	1.34	1.15
Human Factors	2164	1592	1221	1100
per MTM	3.01	2.35	2.13	2.00
Miscellaneous	879	695	539	456
per MTM	1.22	1.03	0.94	0.83

*per million train miles

TABLE 2

Train Accidents By Type of Accident
Adjusted Thresholds
1980-1983

(excludes grade crossing accidents)

Accident Type	1980	1981	1982	1983
Mainline derailments	2967	2046	1589	1434
per MTM*	4.13	3.03	2.77	2.60
Yard derailments	2442	1804	1249	1230
per MTM	3.40	2.67	2.18	2.23
Collisions	1127	774	542	416
per MTM	1.57	1.14	0.95	0.75
Other	1186	934	821	693
per MTM	1.65	1.38	1.43	1.26
TOTAL	7722	5558	4201	3773
Per MTM	10.76	8.22	7.33	6.85

*million train miles

TABLE 3

Train Accident Casualties
1980-1983

(excludes grade crossing accidents)

Fatalities	1980	1981	1982	1983
Derailments	8	5	8	8
Collisions	20	5	4	11
Other	1	3	2	0
TOTAL	29	13	14	19
Per MTM*	.04	.02	.02	.03

Injuries	1980	1981	1982	1983
Derailments	286	221	200	179
Collisions	341	150	108	116
Other	38	47	50	60
TOTAL	665	418	358	355
Per MTM*	0.93	0.62	0.62	0.64

*per million train miles

TABLE 4

Total Railroad
Fatalities By Type of Person
(excludes grade crossing accidents)

Type of Person	1980	1981	1982	1983
Employees	100	66	76	63
Passengers	4	4	9	4
Nontrespassers*	23	20	9	31
Trespassers	457	466	414	400

Total Railroad
Injuries By Type of Person
(excludes grade crossing accidents)

Type of Person	1980	1981	1982	1983
Employees	56,855	48,348	36,414	30,686
Passengers	569	405	384	457
Nontrespassers	458	397	324	557
Trespassers	474	560	520	496

*includes contractor employees

TABLE 5

Comparison of 1st Quarter 1982 With
1st Quarter 1983 Railroad Accident Data

	1st Quarter 1983	1st Quarter 1984
Train Accidents*	888	973
per billion revenue ton mile**	4.5	4.2
Train Accident Fatalities	2	4
per billion revenue ton mile	0.010	0.017
Train Accident Injuries	57	103
per billion revenue ton mile	0.291	0.446

*Reporting thresholds not adjusted
**Only available exposure measure

Mr. GLICKMAN. If I may just—as long as we're into questions now—let me ask Mr. Johnston, are you the gentleman involved in operations, or who do we have here——

Mr. JOHNSTON. Yes, sir.

Mr. GLICKMAN. You are. I wonder if you might comment on the concerns that have been expressed here—and I have some of them—concerning the relationship between you and the FRA in the whole citation, fine, track inspection, the whole kind of scene of the regulatory environment which is again exacerbated by this crazy system of how these FRA inspectors retain seniority with the railroads that they come from, which is unheard of in the airline industry.

All these things together have put a question in some people's minds about the independence of the FRA, whether they deal with you on an arm's length basis or not.

Mr. JOHNSTON. Yes, Mr. Chairman, I think they do, and for one good reason, really. So many of the folks that do leave the railroad industry to go to work for the FRA go because they are not satisfied with maybe their immediate boss or they've been disappointed because of lack of promotion and they would like to start a new career, if you will. In many cases they are very qualified—don't misunderstand me. They go and leave the propped railroad, the individual railroad, and go to work for the FRA. In view of that, we usually are come down on pretty hard by some of these folks, particularly if they happen to work in a territory that their former employer happens to be operating in, not necessarily the same seniority district, but—You know, the railroads are pretty large today. You can go four or five States away and still be inspecting the same particular property.

Mr. GLICKMAN. But do you—I'm not saying do you fear the FRA—but do you have the feeling that—When you talk to airlines and you get their feeling about the FAA—of course, there's a historical difference, I realize, in the regulation of the two industries. But, I mean, I'm just wondering if you feel in an equal bargaining situation. I'm trying to figure out how do you characterize, as a railroad industry, your relationship with your regulator.

Mr. JOHNSTON. Well, we think for the most part that the FRA is fair. Obviously, you're going to have judgment calls out there with your inspectors, and there are differences of opinion as to what, if, indeed, there is a violation involved, because again so many of them are judgment calls, because they're not really cut and dried, such as a cross tie violation is a good example. So for the most part, we find that the FRA inspectors are helpful, if you will, to the industry because they have one specific thing in mind, as you can appreciate. When they're out there inspecting, they're looking for something wrong, and that's their job. We don't fuss with that. So as a result of that, in the daily routine of one's work, that as a railroad employee he sometimes may overlook something, where an FRA inspector will find it, point it out to him, and then correction can be made. So this is where we find the FRA inspectors extremely helpful.

Now, we don't always agree to them as to their interpretation of a regulation, but for the most part, the FRA inspectors are helpful to the industry and we take their advice, and when they point out a citation, for the most part, the resources are available at that particular time, it's corrected immediately if not within a reasonable timeframe.

Mr. HARRIS. I think that when Bill says helpful to the industry, what he means is that they provide another set of inputs about safety issues that ought to be corrected. There they sure are not patsies for the industry——

Mr. GLICKMAN. Well, are they too easy on you? I'm sure you wouldn't say yes, but——

Mr. HARRIS. Are they too easy on us you ask?

Mr. JOHNSTON. Your question again is, are they too easy on us? No. In fact, some of them we think are pretty tough. In fact, most of them.

Mr. GLICKMAN. I mean, that's their job. Their job——

Mr. JOHNSTON. And that's their job. We don't fuss with that.

Mr. GLICKMAN. Now let me ask you——

Mr. JOHNSTON. As long as they're right.

Mr. GLICKMAN. Your relationship with Amtrak, you know, this kind of bifurcated situation concerns me a bit in terms of the traveling public. Who do they rely upon for the safety of Amtrak? Do they rely on Amtrak or do they rely on the operating railroads? Apparently from the hearing today we see they have to rely on both, unless they're operating on Amtrak's own track—that is, they're operating your track, your personnel to a large extent. And I'm wondering, does this make it difficult for Amtrak, as theoretically the manager of the system, to ensure that their system is safe?

Mr. JOHNSTON. I don't think that's a real problem. Of course, at one time there was a number of slow orders in effect throughout our national rail system because there was, indeed, at one time some years ago, 10 years ago, there was some deferred maintenance, and for obvious reasons. The railroads were having a tough time, and the bankruptcies we all know about, and there is no use in going into that to prove that.

But no, the railroads, it's their responsibility, as Mr. Claytor pointed out here this morning, to provide a safe operation, and if, indeed, there is a segment of track that is not capable of handling the trains at the maximum authorized public speed and their timetables, they are slow ordered, and of course corrective action is taken. And Amtrak, if they have sufficient delays involving their trains, they're constantly talking with the carrier that handles their train to get these slow orders off so that they can improve their own time performance. There's also incentive programs for the carriers to operate on time, which gives them sort of a bonus, if you will. It's to the carrier's advantage, indeed, to provide not only a safe railroad for the passenger operation but for their freight operation which is, of course, where they make their bucks.

Mr. **Glickman**. Thank you.

Mr. Carney.

Mr. **Carney**. Thank you very much, and I thank you, Mr. Harris, and Mr. Johnston and those with you for your testimony.

I don't have any questions, but I'll do something I seldom do, and that is to summarize my thoughts of this hearing today.

I think that one thing was brought out very clearly in these hearings today, that labor, management, government, everyone wins when safety is the forefront of those entities dealing with railroads. It seems to me that is the case in most instances. But as we progress alone with whatever we do in life, we sometimes get so accustomed to something we need our minds jogged. Certainly this, what I would have to consider to be a glitch in statistics in the past month, should bring safety clearly to the minds of everyone involved in the railroad industry, and I know it will. If anything is to be derived from these unfortunate incidents it would be that, and that would be positive in a way. I would never want to encourage a derailment, an accident or anything to point out the need for safety, but nonetheless, that probably will be a byproduct of what has happened in the past month.

I think, too, that it's clear to me, the statistics brought forward by Government, by the labor unions and by management, that the railroad industry has a very good track record, and that the American public should not lose confidence in their railroad system. The passenger system is a safe system, it's a clean and efficient system, particularly the Amtrak system. I would think that these hearings that have taken place here in the House and, of course, we had hearings in the Senate, and the press coverage of these accidents is very, very healthy from the standpoint that it would rekindle everyone's concern about safety and put it on a plane that's where it belongs. I'm sure it's always there. I hope I don't mislead anybody by saying that.

But again, when you do something day after day after day after day after day, it becomes commonplace and sometimes we do it more subconsciously than consciously. I am sure this will rekindle our conscious effort and safety.

We learned today that there are improvements that can be made. Certainly connecting our vast meteorological services available to us, both from Government and private sector, to the operation of our railroads would be of great benefit. The continuing expenditures of money in research and development—and your own industry said that last year they spent $35 million in that area—that's going to improve our rail system in the United States.

I would hope that we see this glitch come to its end as of today, and that the statistics return to their normal plane and, in fact, I say that because that normal plane is an ever-decreasing plane as far as fatalities and accidents are concerned.

I think my conclusion at this point is that Congress will continue to monitor our railroad systems, and they should. You, as an industry group, will do the same. Government agencies responsible will do the same, and labor, I'm sure, will continue to monitor the safety factors in rrs.

In concluding, I would just like to put into the record the statistics of fatalities last year, because I'm amazed to find out that out of the 1,119 fatalities, 501 of them were trespassers on railroad tracks, whether they were sleeping or just killed in crossing railroad tracks. Certainly that's something that we can improve on, but it's not something that you can relate due to operation, mistakes by the engineer. If someone was to want to commit suicide or if a child tried to race a train across the track bed. And then 529 additional fatalities were nonpassenger fatalities, which would indicate to me they would be people who were not trespassing but crossing railroads at legal railroad crossings and not following proper safety procedures. If you go down and look at the rest of the statistics, you will find that only 34 employees were killed who were on the trains. An additional 44 were killed which would indicate to me they were track personnel or people that were, although employed by the railroad, not on the train, working in some fashion.

That, to me, clearly indicates that it is a safe mode of transportation. Like every other mode of transportation, it requires continual scrutiny, and it will receive that scrutiny, I am sure, particularly in lieu of what has happened. But the message has to get out clearly to the American traveling public, that our railroads are safe, and I hope that—I'm sure that the chairman shares that same interest with me, and I hope that this hearing will help to do that, and I hope that this hearing will, of coure, rekindle everyone's consciousness to the issue of safety in our American railroad system.

Thank you, Mr. Chairman.

Mr. GLICKMAN. Thank you, Mr. Carney.

I would like to echo your thoughts. I have been a—you know, I grew up near the railroads, my father was in a business that used them all the time. It's sad to have seen a period of time when, for a variety of reasons, natural as they may be, that railroads went into a period of decline, of not as much capital investment as they had before, for a variety of economic reasons.

You know, we in Congress tried to respond by passing the Staggers Act, which provided rate and route flexibility. We did not, however, deregulate safety issues. We believe very strongly that that is an appropriate Federal role, to protect the public who travels in passenger trains, and who lives near the trains that go by carrying all the goods that we need. A safe and efficient functioning rail system is critical to the national security and economic survival of America.

I also want it to be a healthy system. I want you people to make money. I also want you to plow a lot of that money back into improvements in the system so that we can build the infrastructure. But most important of all, the purpose of these hearings is to not only demonstrate that primarily rails are safe, but also that work still needs to be done to make them safer. I think that that's our point, is to be constructive today, that we want to make those people who take trains have the confidence that they're going to be safe when they go from Washington to New York or Newton, KS, to Chicago, and at the same time we want people to believe that as they travel, as they are near trains that are carrying anything from wheat to toxic materials, that they are being traveled safely. It is in your best interest to make sure that happens. Obviously, you don't want law suits and you don't want to lose money from accident, and obviously it's in our interest to ensure that the public interest is best protected.

So, given that, I think these hearings have provided a useful forum to air some of the things that need to be done in the future as well as to compliment those who have done a good job in the past.

Mr. Johnston.

Mr. JOHNSTON. Mr. Chairman, if I may, with your permission, address an earlier question by Mr. Carney with regard to maintenance expense——

Mr. GLICKMAN. Can you do it in 2 minutes?

Mr. JOHNSTON. Yes, sir.

Mr. GLICKMAN. OK.

Mr. JOHNSTON. In the year—I think he asked for in 1979 through 1983, just maintenance and way, not capital money now, in 1979 was $10,601 million; $11,311 million; $12,403 million; $11,622 million; and $11,014 million. That's for those 5 years that you asked about. I wanted to be sure that was on the record. And that's just for the class I railroads, sir.

Mr. HARRIS. That's a little more than we made during those years. [Laughter.]

Mr. GLICKMAN. Thank you very much.

The hearing stands adjourned.

[Whereupon, at 1:25 p.m., the subcommittee was adjourned.]

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